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AN INVESTIGATION OF
RETAIL VEGETABLE SEEDS

BY

RALPH BARNARD HOWE

THESIS FOR THE DEGREE OF BACHELOR OF SCIENCE

IN THE

COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS

PRESENTED JUNE 1904



UNIVERSITY OF ILLINOIS

May 30,

1904

THIS IS TO CERTIFY THAT THE THESIS PREPARED UNDER MY SUPERVISION BY

Ralph Barnard Howe

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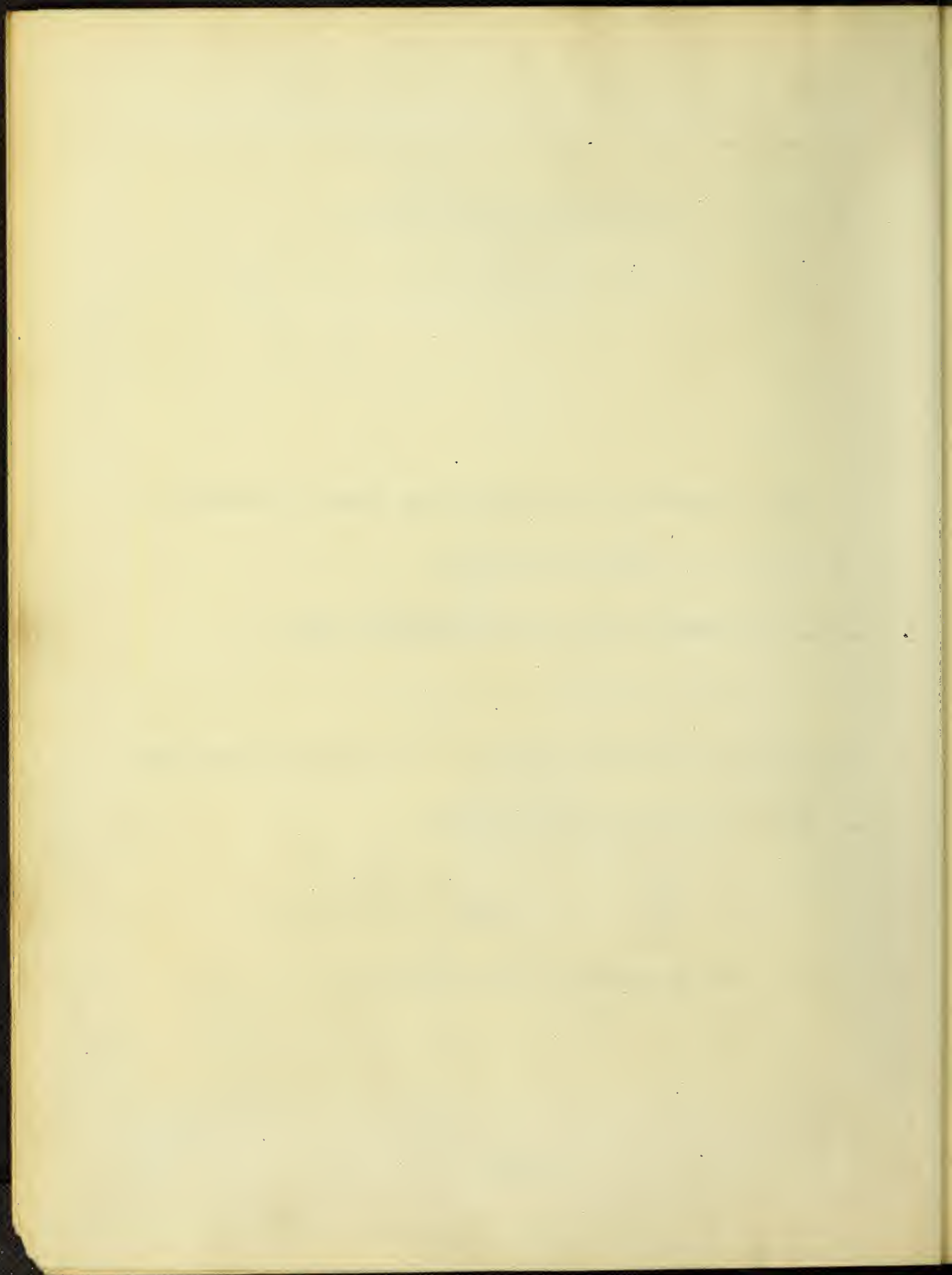
IS APPROVED BY ME AS FULFILLING THIS PART OF THE REQUIREMENTS FOR THE DEGREE

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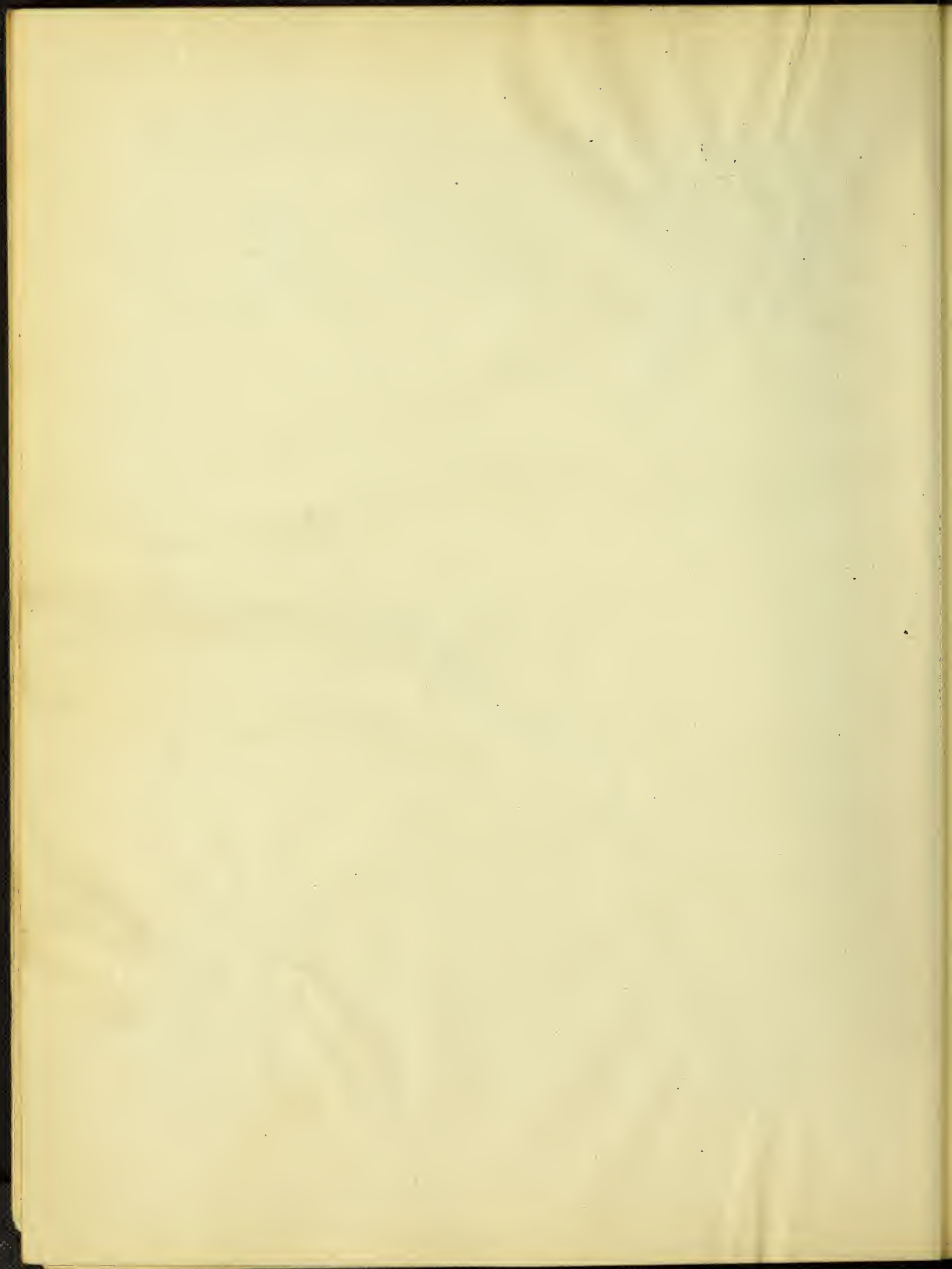


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AN INVESTIGATION OF RETAIL VEGETABLE SEEDS.

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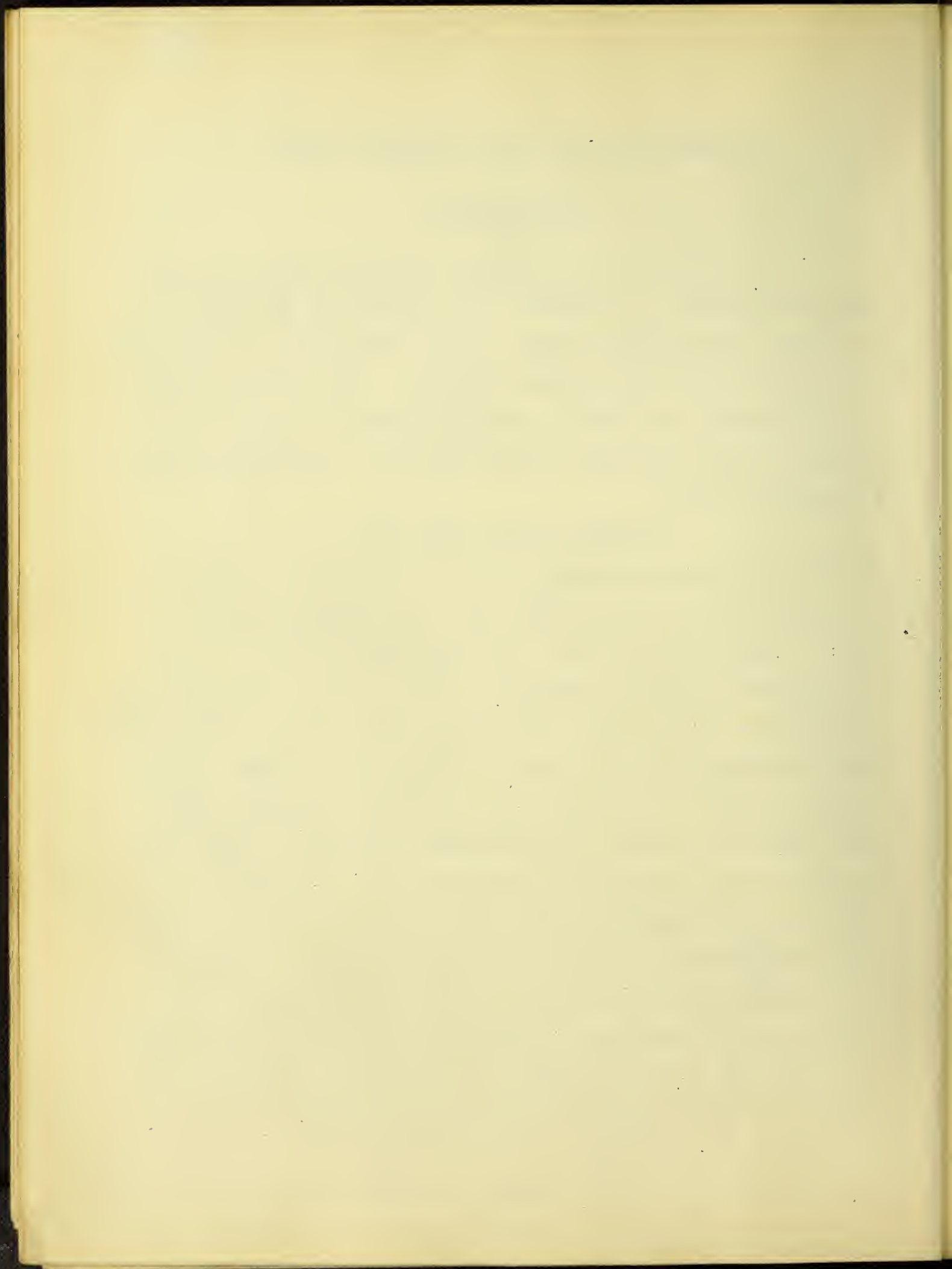
AN INVESTIGATION OF RETAIL VEGETABLE SEEDS.

-Introduction-

This Investigation of Retail Vegetable Seeds was undertaken to determine, if possible, the character of the seeds sold in packets, and the value of the "Tested Seed" card on advertising matter and in the catalog of the seedsmen. Work similar to this has been carried on at various other Experiment Stations, but the shortage of the seed crop in 1902 furnished an opportune time for a test of this kind.

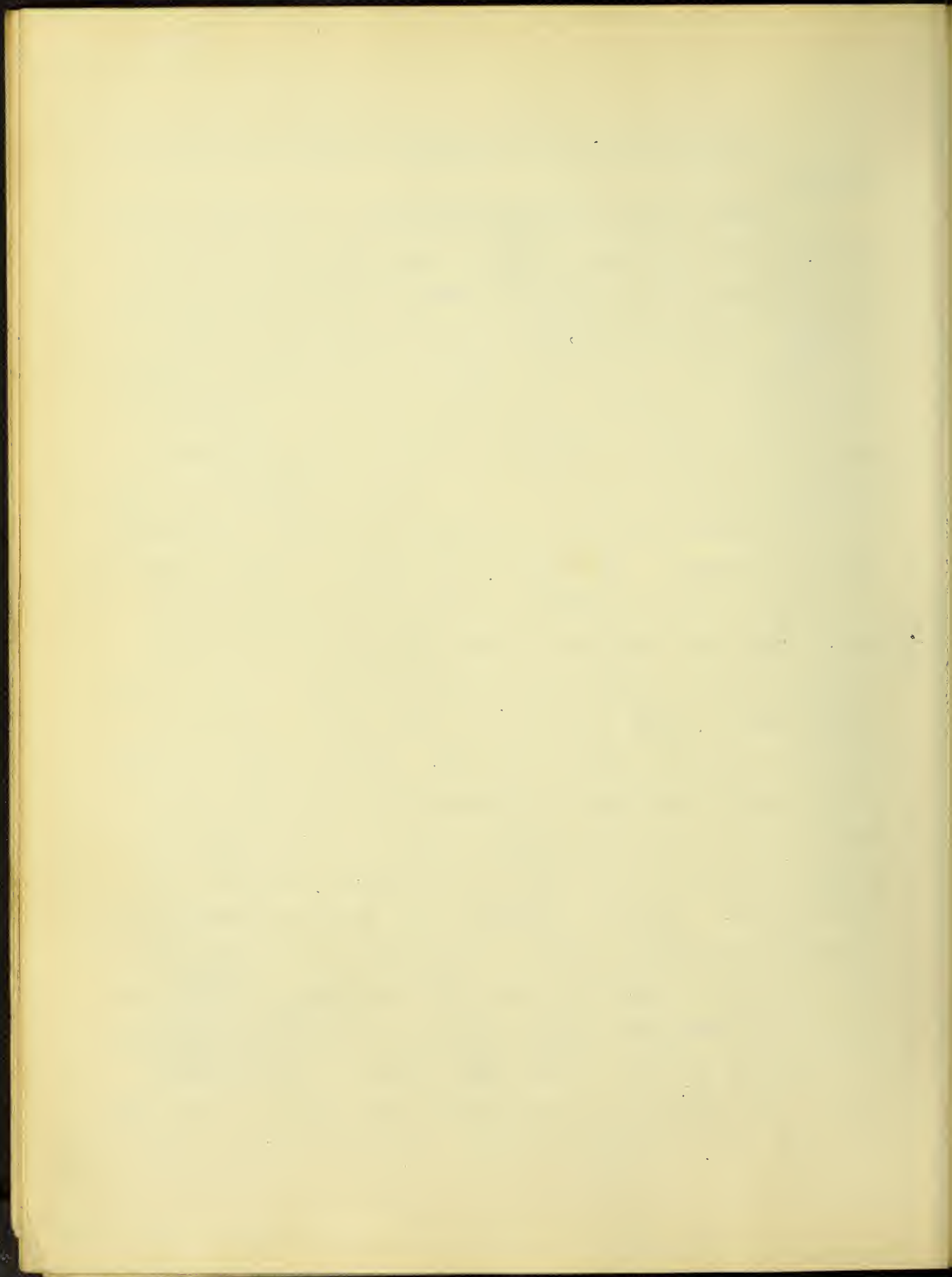
-Shortage of 1902 Seed Crop-

The following extract from Vicks's Garden and Floral Guide for 1903 gives the shortage from the seedsmen's point of view: "The past season was a very unfavorable one for growing and maturing seed crops generally, and, as a result, many kinds and varieties are scarce, and consequently, higher priced. There was a particularly short crop of what is known as Vine Seeds, embracing the Cucumber, Squash, and Melon varieties; also Sweet Corn, Peas, Radishes, Carrots; and other kinds; the crop of Golden Self Blanching Celery was almost an entire failure. In view of the short supply and prevailing high prices there will be a tendency to throw upon the market spurious varieties of mixtures of old and new seeds with a low percentage of germination. Farmers and gardeners should therefore be particularly cautious in their purchases, and deal only with seedsmen of established reputation, or they will be apt to suffer loss and disappointment."



In his catalog under "Muskmelon", Burpee prints the following:

"Never before has there been known in the history of the seed crop such a shortage in seed as now, owing the adverse climate conditions and the attack of insects in several seed growing sections. Prices of seed, are, therefore, necessarily higher than usual, while, as we noted, there are some varieties which we cannot supply in quantity, and several of which we are obliged to report "Crop Failed". Fortunately we have an ample supply by: declining wholesale orders of ----." Similar statements are made in most catalogs in one place or another, but all have practically the same statement. The Florist's Exchange for January 3, 1903 gave a short review of the "Nebraska Seed Crops", which is given here: "The Vine Seed Crop in these parts was almost an entire failure, caused by insects and unfavorable weather. Most of the growers have not gotten stock seed for next season's planting; a few have carried over stocks from 1900. Those that have supplies of the standard varieties and novelties will surely be in it. The shortage of crops will benefit the mail trade and legitimate dealers as grocerymen and country store dealers cannot get stock at cut prices. Seeds are invariably sold throughout the West by grocerymen and hardware dealers, at one-half catalog prices, by ounce and quart. Sweet corn is a very short crop; not over twenty percent of Evergreen, Country Gentlemen, Early Minnesota, Cory, or Crosby will be saved. From twenty acres of Hubbard Squash planted, not one pound of seed matured; other growers in this section report the same kind of failures. Growers will have to get

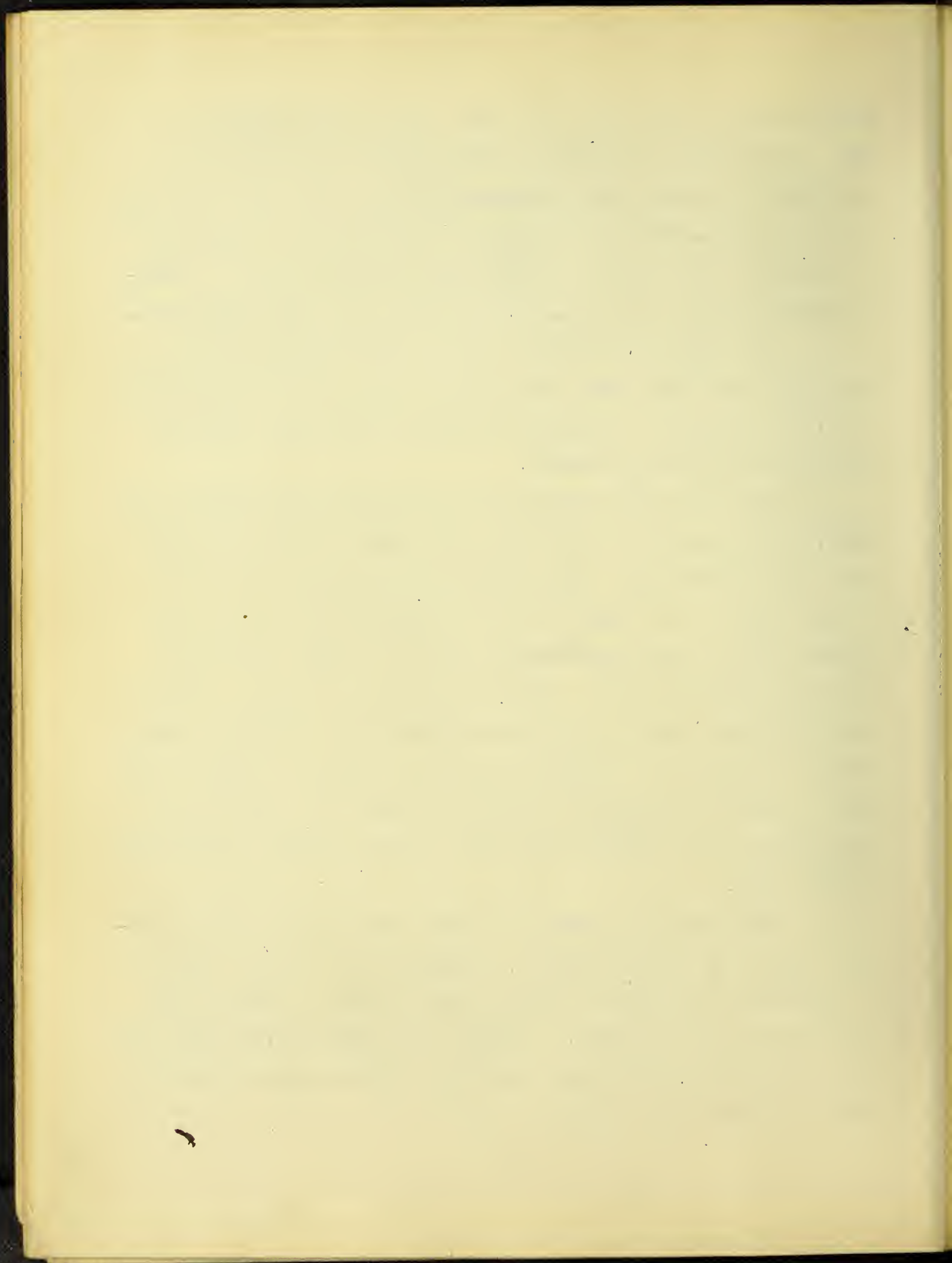


better prices or there will be a very small acreage planted in 1903. The growing of Alfalfa in this country is bringing in many kinds of insects that are destroying the seed crops. We have a worm similar to the corn worm that is destructive to the fruits of tomatoes; entire crops of these being destroyed by it. Cucumber seed is selling readily at \$.75 to \$1.00 per pound, wholesale."

The America Florist on June 4, 1903 reported that: Henderson's Bush Lima Beans are scarce, recent sales being reported at \$8.00 per bushel. Stowell's Evergreen corn either scarce or someone has cornered the market.

From the above reports and statements we can readily see that the seed supplies of the Vine crops and corn were especially short and prices high. The question which grows out of this shortage seems to be, "How was this shortage met?" and "How were seedsmen able to offer seeds at one cent per packet considering the high wholesale price?" Upon an examination of seed catalogs for a few years back it is noticed that the price of ^{the} retail packet remains the same; and it must be that the shortage in supply will cause a decreased quantity of seed to be sold for a packet, or by substituting in the packets old seeds of poor vitality or varieties of less value.

This test was planned to cover three phases of seed testing; quantity of seed per packet, viability, and purity. It was not possible to undertake a fourth test, trueness to name in the time available for the work. Because this investigation does not cover the latter we must grant that the seeds were true to name in lack of evidence and contrary.



In order to make the test as complete as possible we purchased seeds from six fine classes of seedsmen, having forty firms represented:

First- All retail seedsmen having their offices in Illinois. (9)

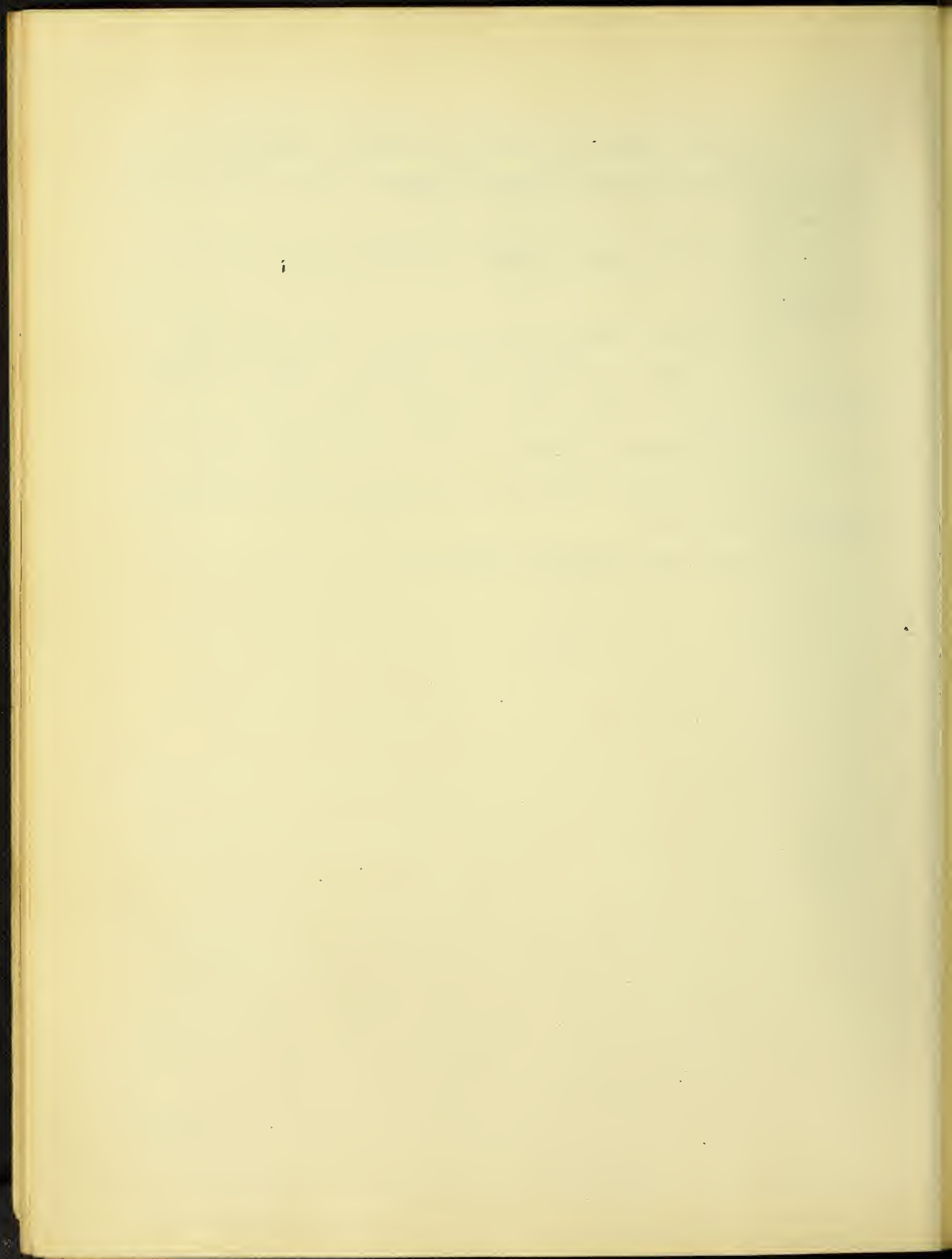
Second- Two representatives Eastern seed firms. (2)

Third- Seeds purchased from commission boxes in Campaign and duplicate orders sent to the home office. (6)

Fourth- Cheap collections offered in the Farm papers (17)

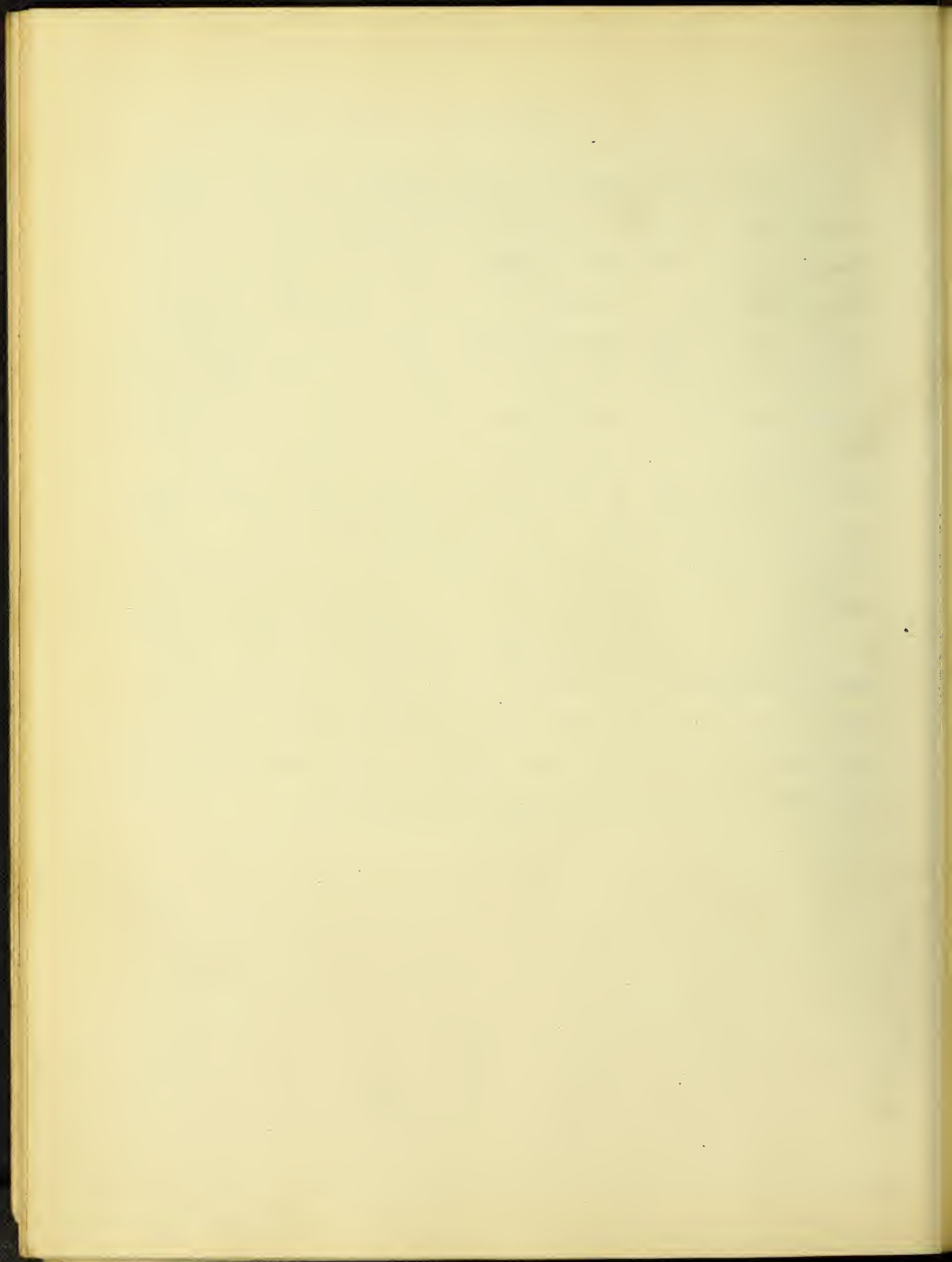
Fifth- Packets offered at one cent each in the Chicago Department Stores (4)

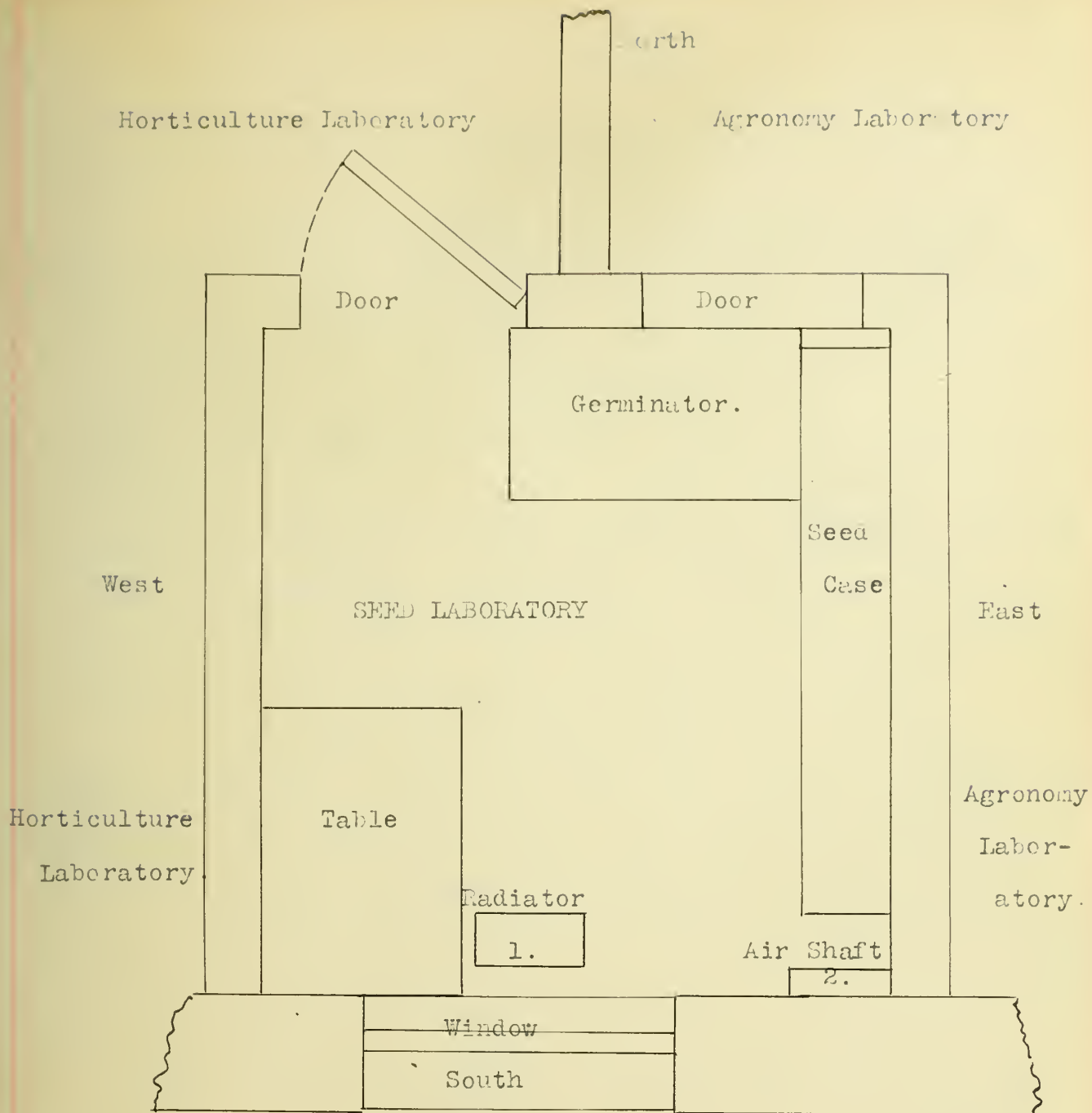
Sixth- Free Government seeds. (1)



- The Room -

The room in which this work was carried on was located on the South side, in the center of the first floor of the Agricultural Building. The room was small, being 8'-6" feet by eight feet. The floor was concrete and all the walls were of heavy brick. In the south wall was a large window and in the north partition were two doors, the east door opening into the agronomy and the west door into the Horticulture laboratories. The east door was not used and the germinator was placed in front of it and against the seed case which occupied the east side with the exception of a small ^{space next to} air shaft. Under the window was located a small radiator. [^] The work table was located in the south west corner. The room was easily heated on account of the small exterior exposed and also the nature of the walls and floors; this was a great advantage because no heat could be had in the room after 5 P.M. when the steam was turned off, and at six the electric lights in the germinator were turned off. It was a comparatively easy matter to have the alternating temperature recommended.





Plan of Room Used As Seed Laboratory

- 1- Radiator
- 2- Air Shaft

- Seed Case -

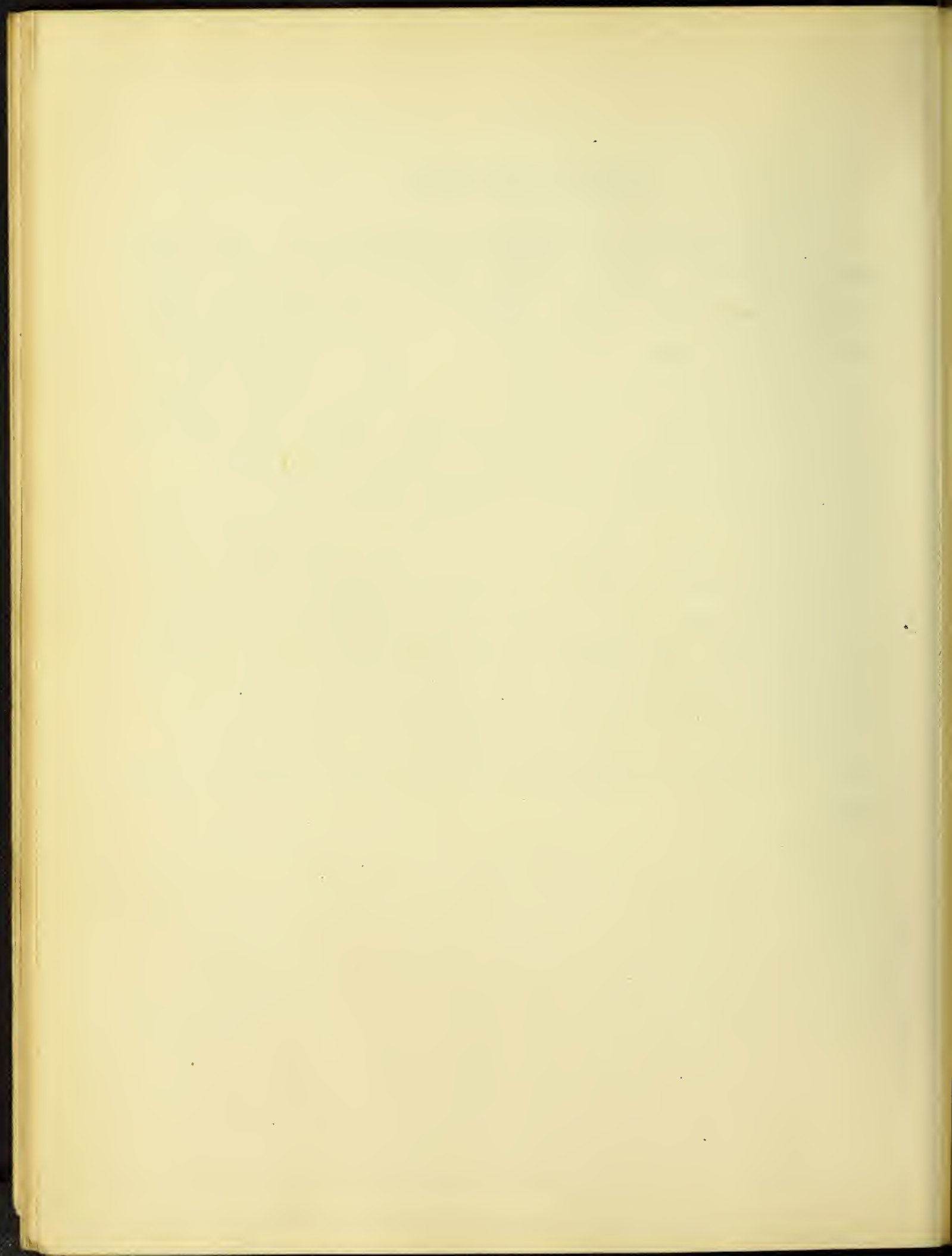
The room was provided with a mouse proof seed case. This case was of very heavy oak construction and was 8 ft. X 1 ft. X 12 ft. and contained 180 drawers. The drawers were of three sizes; 150 of a small size used for packet seeds; 20 of a size larger for such seeds as corn, beans, and peas; and 10 third size for storage of quantities of seed. These drawers were 7 in. X 5 in. X 11-1/2 inches for the small drawers and the second size were the same size but three inches deeper. The third size were twice that of the second. Only a small section of this case was used, but all seeds were stored there and the whole kept closed.

Each variety had a special drawer, and the seeds were kept in these at all times so that they were subject to similar conditions during the entire test. For convenience in finding desired seeds, the varieties were arranged in numerical order.

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-System of Numbering-

The system of numbering was arranged so that each hundred number stood for a variety of seed, and thus it was easy to locate packets if mixed with others. Numbers 1 to 99 were used to indicate packets of seed in the varieties. When the samples were received they were all distributed into drawers, and when nearly all the samples were in they were numbered, with no regard as to the source, but a slight arrangement according to varieties. The numbers were entered in an index book and the number and name entered on the record blank, but with no name attached, so that in testing; the seedsman selling the sample was unknown until the test was completed. As a further means of removing the identity of the seedsman, the samples were placed in number 3 Coin envelopes and fastened with a wire paper fastener so that the sample was easily examined and at the same time could not fall out and be lost. (A full list of the numbers will be found preceding the tables)



-Balance-

The balance used in weighing all the packet seeds was a Troemer No. 10 Chemical Balance and accurate to one milligram. All seeds purchased in quarter pounds were weighed on a torsion balance to one-half gram. In order to show the relation between grams and ounces the following conversion table is introduced.

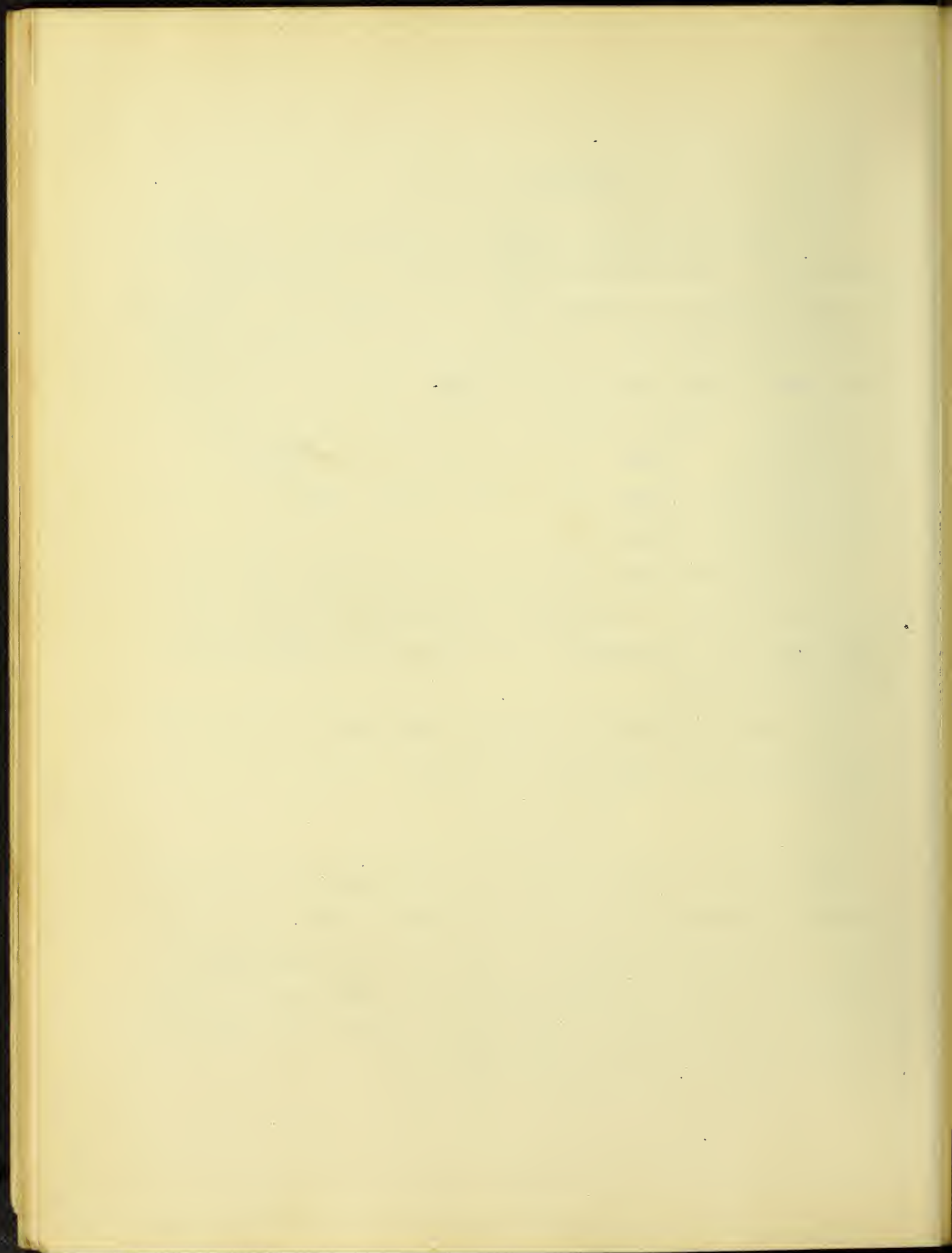
1 gram	15.432	grains	1 avoird. oz.	28.35	grams
1 Decigram	1.5432	"	1 grain	.0648	"
1 Centigram	0.1543	"	4 oz. avoird.	113.40	"
1 Milligram	0.0154	"			

Impurities were not weighed more accurately than .005 gram because it was not possible to remove the impurities with more accuracy, and the seedsmen do not employ scales accurate to one-tenth of a grain.

When the seeds were weighed, notes were made upon their condition ^{if} otherwise than bright and clean.

- Vitality Test -

The method of testing employed was that described in Circular 34, Office of Experiment Stations, published in 1897. This contains the method recommended by a committee of the Association of American Agricultural Colleges and Experiment Stations "to devise and adopt a standard form of seed testing apparatus and method and procedure for use in all American Stations."



-Rules For Seed Testing-

1- SENDING SAMPLES.- Every sample for test^{ing} should be sent to the station in a securely fastened package accompanied by a statement certifying to the fairness of the sample, its source, etc. Blanks for this purpose will be furnished by the station upon application. In case of guaranteed seed, the sample must be taken in accordance with directions given in the sampling ~~book~~ blank No. 2.

2- PURITY TEST- All purity tests shall be made by weight from fair, average samples of seed. The minimum quantities to be used for this determination are named below and must be so drawn as to secure a thoroughly representative sample.

One gram: *Agrostis* spp., the Poas, yellow oat grass, tobacco.

Two grams: Bermuda grass, velvet grass, timothy, meadow foxtail, crested dog's tail, orchard grass, sweet vernal grass, alsike clover, white clover, Umbelliferae, and all the fescues except meadow fescue.

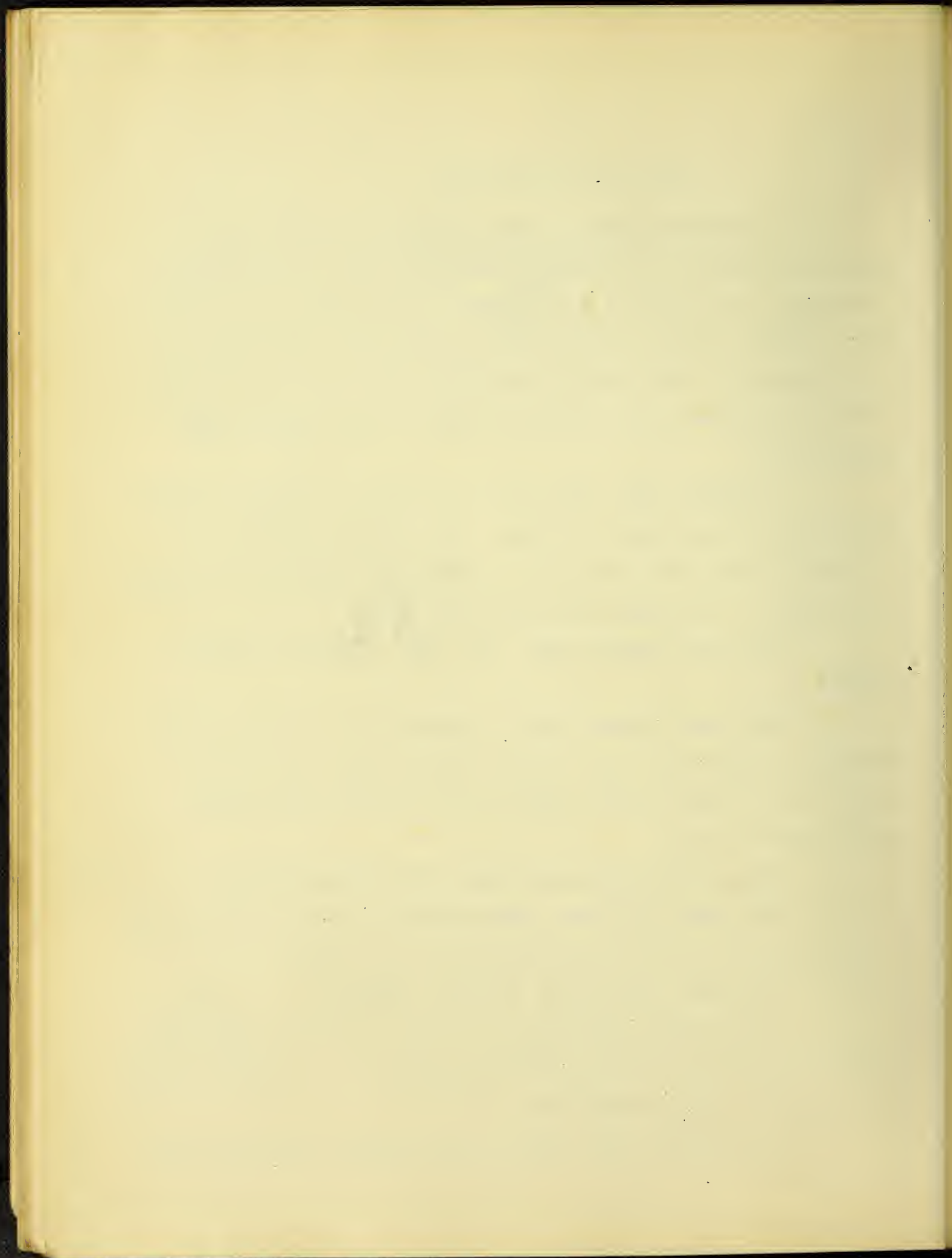
Three grams: All grass seeds not enumerated above.

Five grams: *Melilotus*, *Medicago* spp., millet, lettuce, and all species of clover seed except white and alsike?

Ten grams: Cruciferae, flax and *Lespedeza*.

Thirty grams: Buckwheat, *Vicia* spp., *Lathyrus* spp. beet "balls", esp. rette, lentils, sunflower, teosinte, erradella, cucurbits, and all cereals except corn.

Fifty grams: Peas, beans, corn, lupines, cotton and cow-



peas.

Amounts to be taken of seeds not enumerated shall be the same as those required for seeds named which are of similar size.

In case the sample is suspected to contain any seed of a pest, like dodder, Canada thistle, wild mustard, plantain, etc., at least fifty grams shall be examined for said impurity.

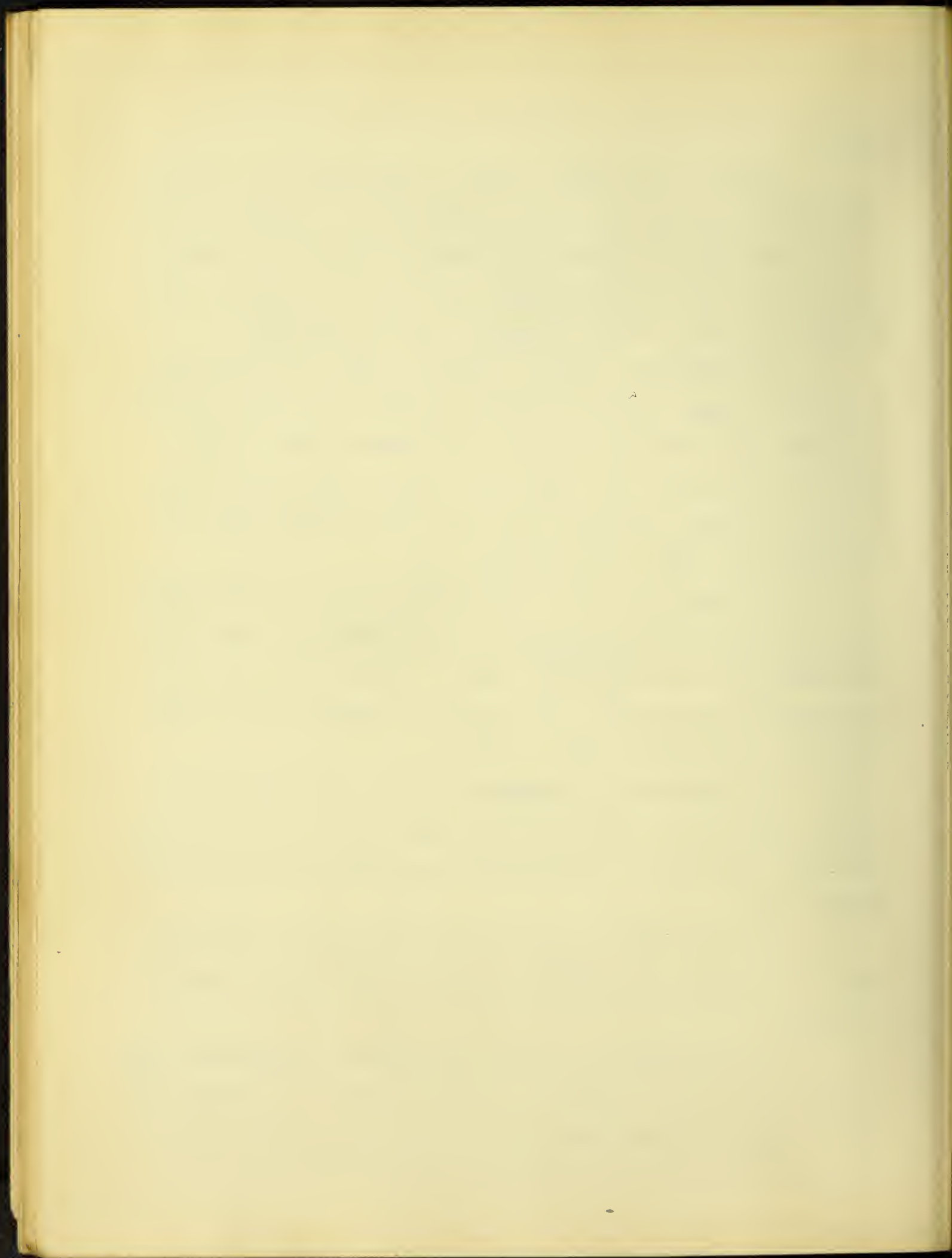
3- GERMINATION TESTS.- (a) Seed.- Seed for germination test is to be taken indiscriminately from pure seed which has been thoroughly mixed for that purpose. One hundred seeds of peas, beans, corn cucurbits, and those of a similar size, and 200 seeds of clover, spinach, cruciferae, and those of a similar size and smaller shall be taken for each single test.

(b) Duplicate tests and allowable variation.- The laboratory tests shall be made in duplicate simultaneously, under identical conditions and the ^{average} results taken. If the duplicated tests vary more than ten per cent, they shall be repeated; also a supplementary test should be made in sand.

(c) Substratum to hold seeds.- For a substratum or seed bed the committee recommends for the present year a blue blotting paper to be obtained of Carter, Rice & Co., 246 Devonshire street, Boston, Mass.

(d) Hard seeds.- At the close of the blotter test one-third of the leguminous seeds which remain hard shall be counted as viable.

(e) Supplementary tests.- We recommend supplementary test in sand wherever practicable in the case of the Poas, Agrostis spp. celery, tobacco, and all seeds which in laboratory tests fail ten per cent or more below the germination standard adopted by the



Station.

Seeds of *Agrostis*, spp., *Poa*, yellow oat grass, tobacco, and others of a similar size are to be sown upon the surface and the lightest possible covering of sand given them. Other seeds are to be planted at depths equal to about twice their diameter. All seeds are to be planted far enough apart to avoid contact during the process of germination.

The supplementary tests shall be made at a temperature of 20 degrees to 30 degrees C. (68 to 86 F.) in sand sterilized by heating, free from organic matter, and sifted to secure a uniform size. Sieves with a mesh of one millimeter (one twenty-fifth inch) are recommended for this purpose.

In sand tests only those seeds shall be counted viable whose sprouts appear above the surface of the ground. The results of the supplementary tests shall be accepted when they show a higher percentage than those in blotters; otherwise the percentages secured in blotter tests only shall be used.

(f) Moisture.- The sand and blotters shall be kept well moistened, but not saturated during germination tests. Only potable water of a temperature approximating that of the seed bed shall be used.

(g) Duration of the germination tests.-The following periods of time shall be used for blotter tests: Ten full days for cereals, spurry, peas, beans, vetches, lentils, lupines, soja beans, sunflower, Buckwheat, cruciferae, Indian corn, and cow-peas. 14 days for serradella, esparette, beet "balls", rye grass, timothy, Umbelliferae, tobacco, Lespedeza, and all other field and



vegetable seeds not herein enumerated; 21 full days for grasses except Poa, Bermuda grass, rye grasses, and timothy. 28 full days for Poa and Bermuda grass.

Each day the seed sprouted in blotters should be counted and removed and a careful record made of the same. Sand tests are to be continued three days longer in each case and the sprouts counted only at the close.

(h) Temperature in germinating tests.- It is recommended that the temperature be kept 20 degrees C. for eighteen hours out of each twenty four, and in no case shall it fall below 15 degrees C. or rise above 32 degrees C.

For six hours out of each twenty-four the tests of all grasses (except fescues, rye grasses, and cereals) and cucurbits, cotton, eggplant, tomatoe, pepper and Lima bean should be raised to 30 degrees C. The tests of all other seeds not requiring high temperatures should be lowered to 16 degrees to 18 degrees C. for the same period.

(i) Germinating Chamber.- The germinating chamber may be of any form which gives the operator proper control over the conditions of light, heat, air, and moisture. We recommend the form which is now in the seed laboratory of the United States Department of Agriculture, marked "Standard", and made by Ernest Betz, Washington, D. C. Said test chamber is to be provided with a low temperature thermo-regulator.

4- KEEPING SAMPLES.- A sufficient amount of each sample should be kept by the station in well corked bottles in a dark, dry and cool place for six months, to be used in case a retest is found necessary.



5.- RECORD.- The report of seed tests shall include name of station, station number, name of seed, source of sample, weight of sample, date of tests, percentage by weight and character of impurities, kind of seed bed, temperature of seed bed, number of sprouts germinated each day, percentage germinated, and number of hard seeds which remain at close of test.

6.- Report Blank.- Form No. 3 is recommended for reports of complete test.

7.- TIME FOR MAKING GERMINATION TESTS.- Purchasers of guaranteed seed should send in their samples not later than fifteen days from the date of the receipt of said seed by them. All germination tests shall commence within fifteen days after the seed has been received by the station.

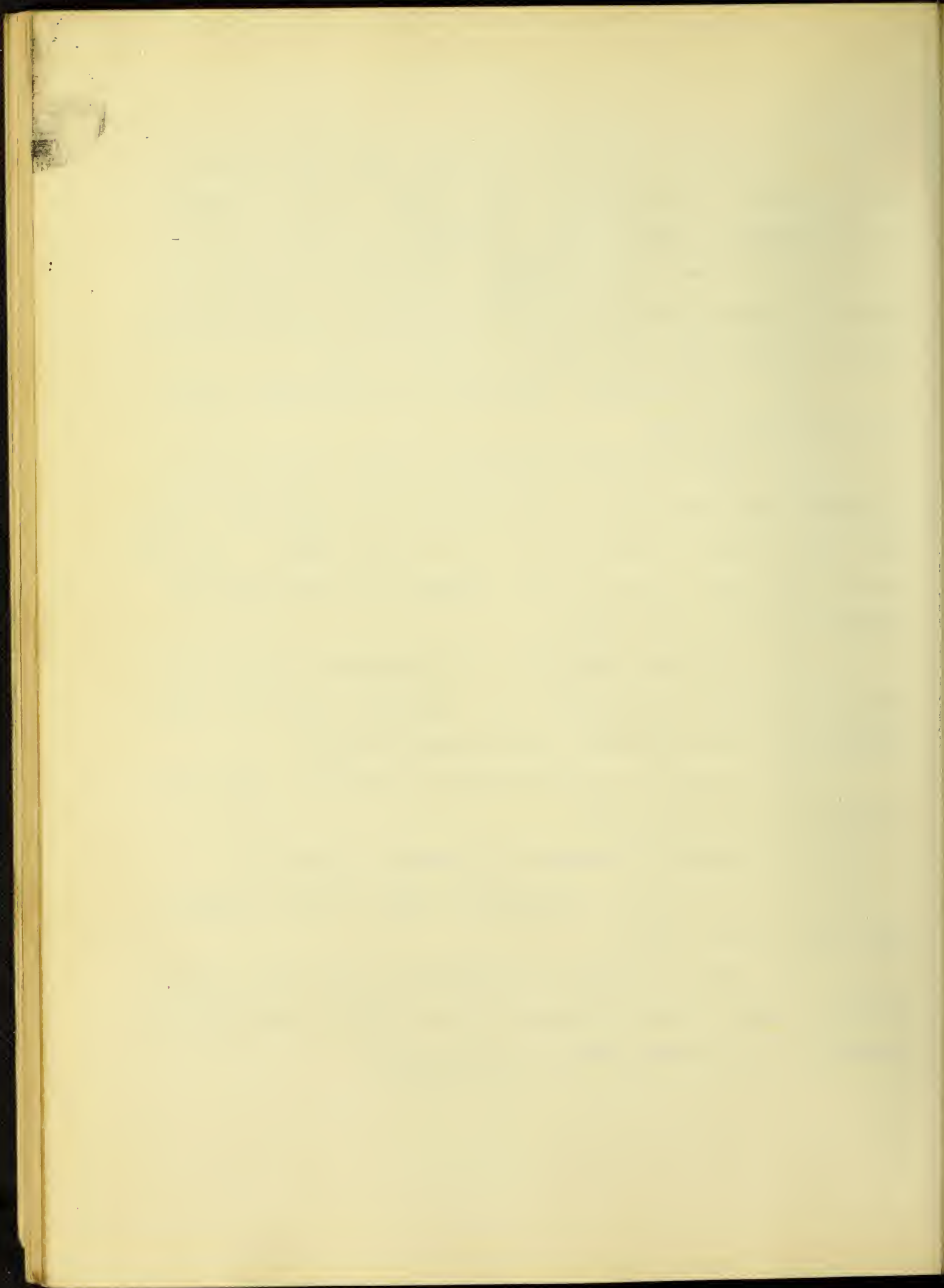
8.- ACCESSORY APPARATUS.- (a) A chemical balance weighing up to 100 grams and sensitive to 1 milligram, kept in a case, together with accurate metric and avoirdupois weights.

(b) A standard simple dissecting microscope and a large reading glass or pocket lens.

(c) Botanical forceps and dissecting implements.

(d) An authentic collection of seeds of the principal weeds and economic plants.

(e) Works treating of the anatomy, morphology, and physiology of seeds, of seed growing, and seed testing; among which we recommend those of Nobbe, Hartz, and Settegast.



Owing To the limited quantity of seed and the method of getting samples, the following changes were made to meet the requirements of this test.

Section 1.- These seeds were purchased in the open market without the dealer knowing the object of the test nor the purchaser's connection with the University. Thus no selection of samples could be made for the packets were sealed when sold and contained an indefinite quantity of seed.

Section 2.- The entire contents of the packet was used in the purity test in place of a weighed quantity.

Section 3.- (a) The number of seed varied according to the number on hand to be tested. Some packets did not furnish sufficient seed to make a single test.

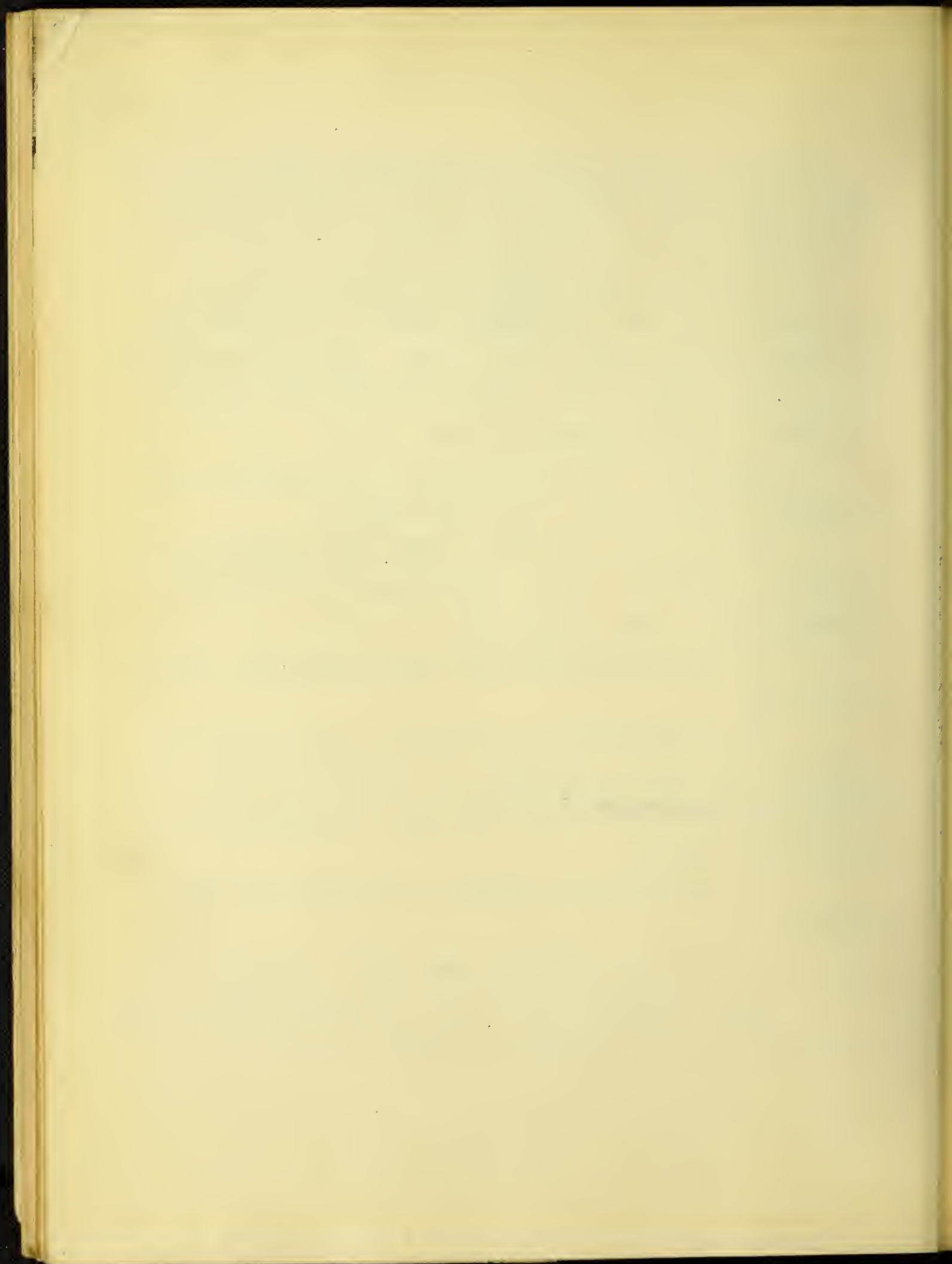
(e) Supplementary sand tests were not made from lack of time and seed.

(h) The temperature was controlled as far as possible, and also suited to the requirements of the seeds being tested. The temperature standard for seed was taken from North Carolina Bulletin 108, page 384.

1.- The germinating chamber is described under head Germinator.

(k) 5- The form of record blank used is attached.

Further remarks as to the method of handling the different varieties will be given under the discussion of results.



7

Name of Seed

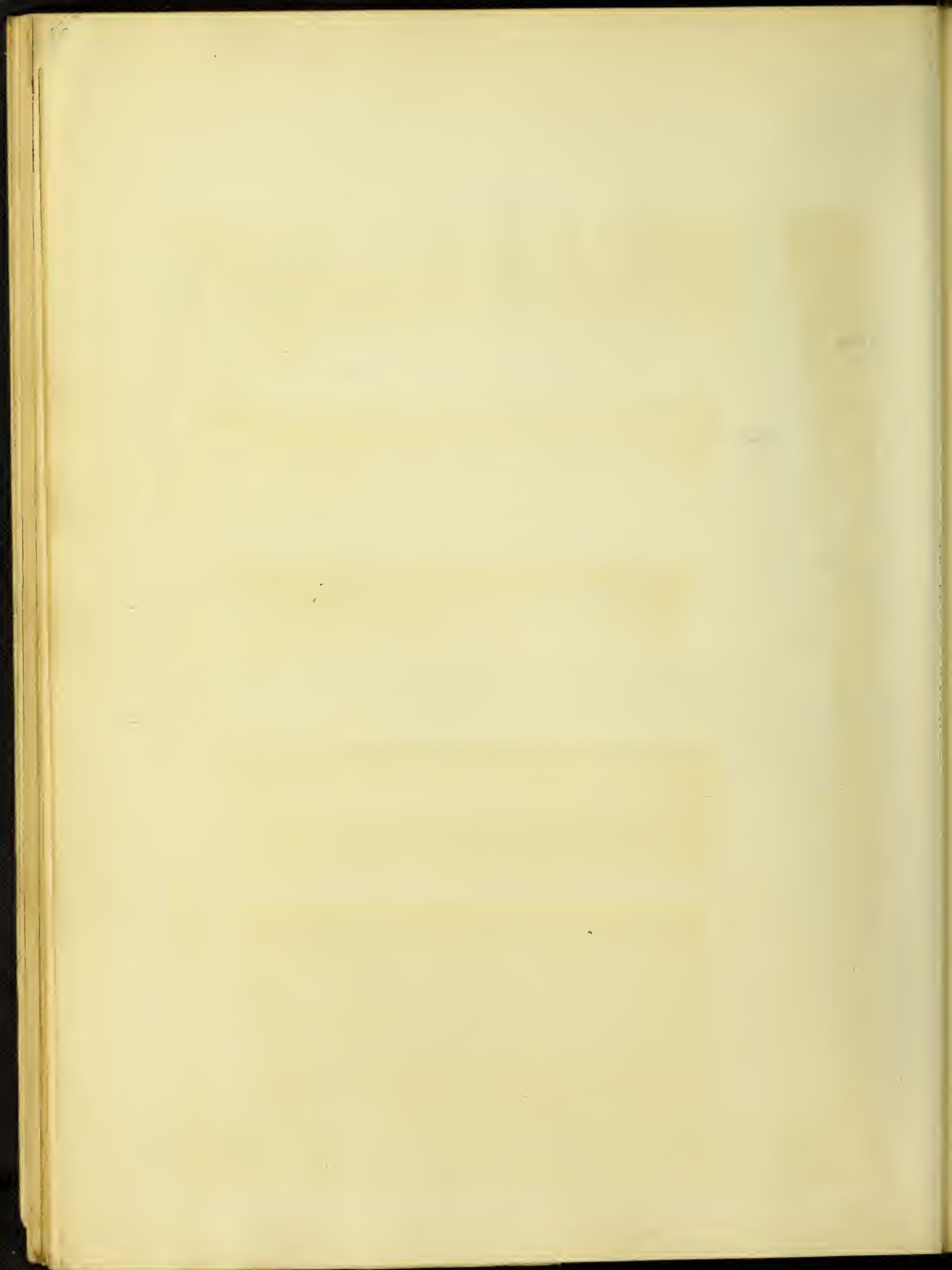
REMARKS:-

24th Nov 1892

- Germinator -

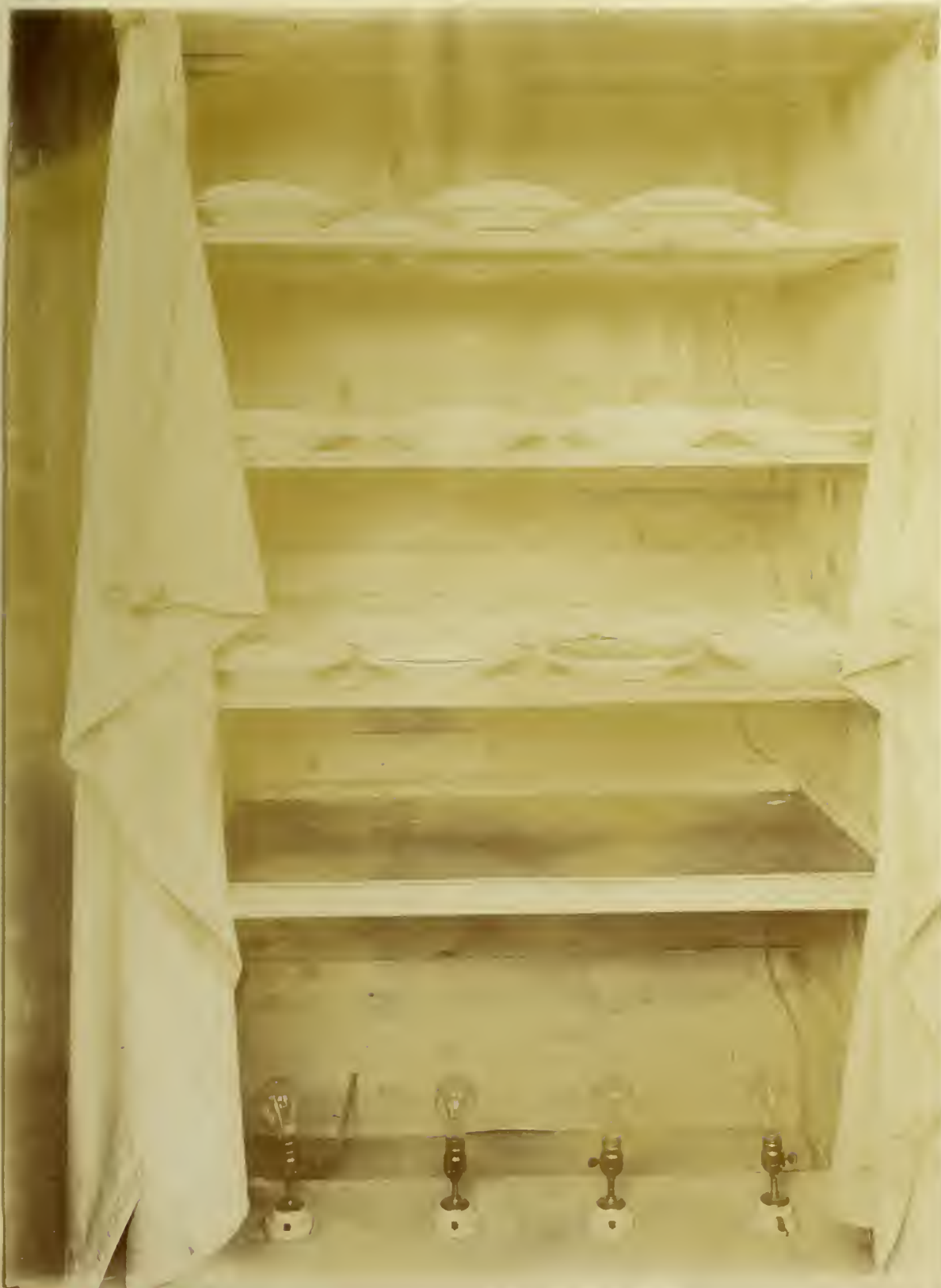
The station not being provided with a copper germinating chamber, a chamber was constructed out of two pine packing cases. The packing cases were broken up as far as necessary to make one large box six feet high, three feet eight inches wide, and 2'-2" inches deep. No door was provided and it became necessary to remove the bottom when the electric lights were installed, the chamber being placed directly upon the cement floor. Five pairs of cleats for shelves were placed at intervals of twelve inches. All the shelves were composed of loose six or four inch boards, except the center shelf which was nailed in order to hold the chamber rigid.

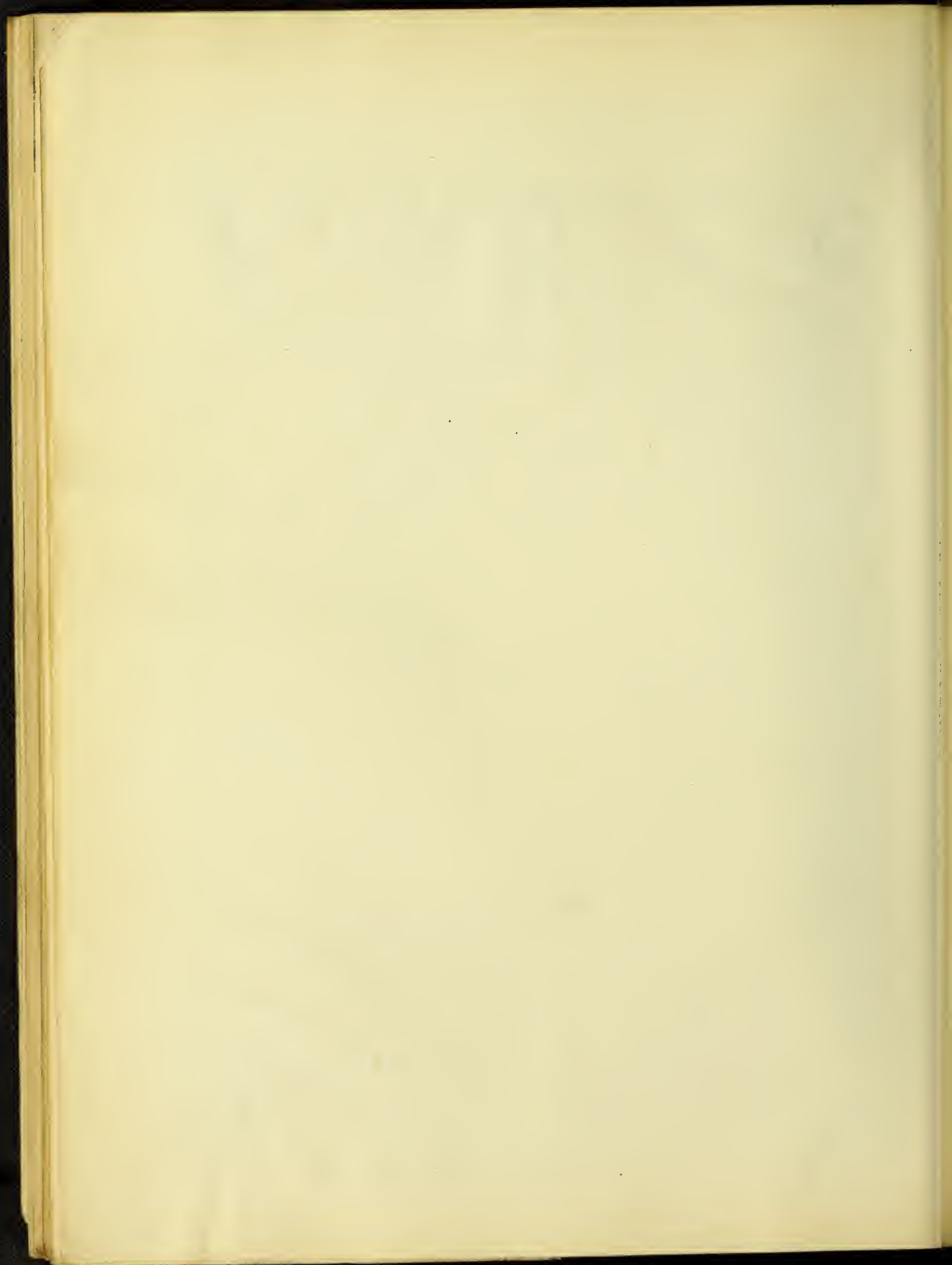
The accompanying plate shows the arrangement of the germinator, the large pan being raised to show the method of treating each. Each shelf has a capacity of 12 large plates or 30 full tests.



" THE GERMINATOR "

Showing the arrangement of shelves, plates, the canvas door, pan and electric lights. (The pan is raised to show lights).

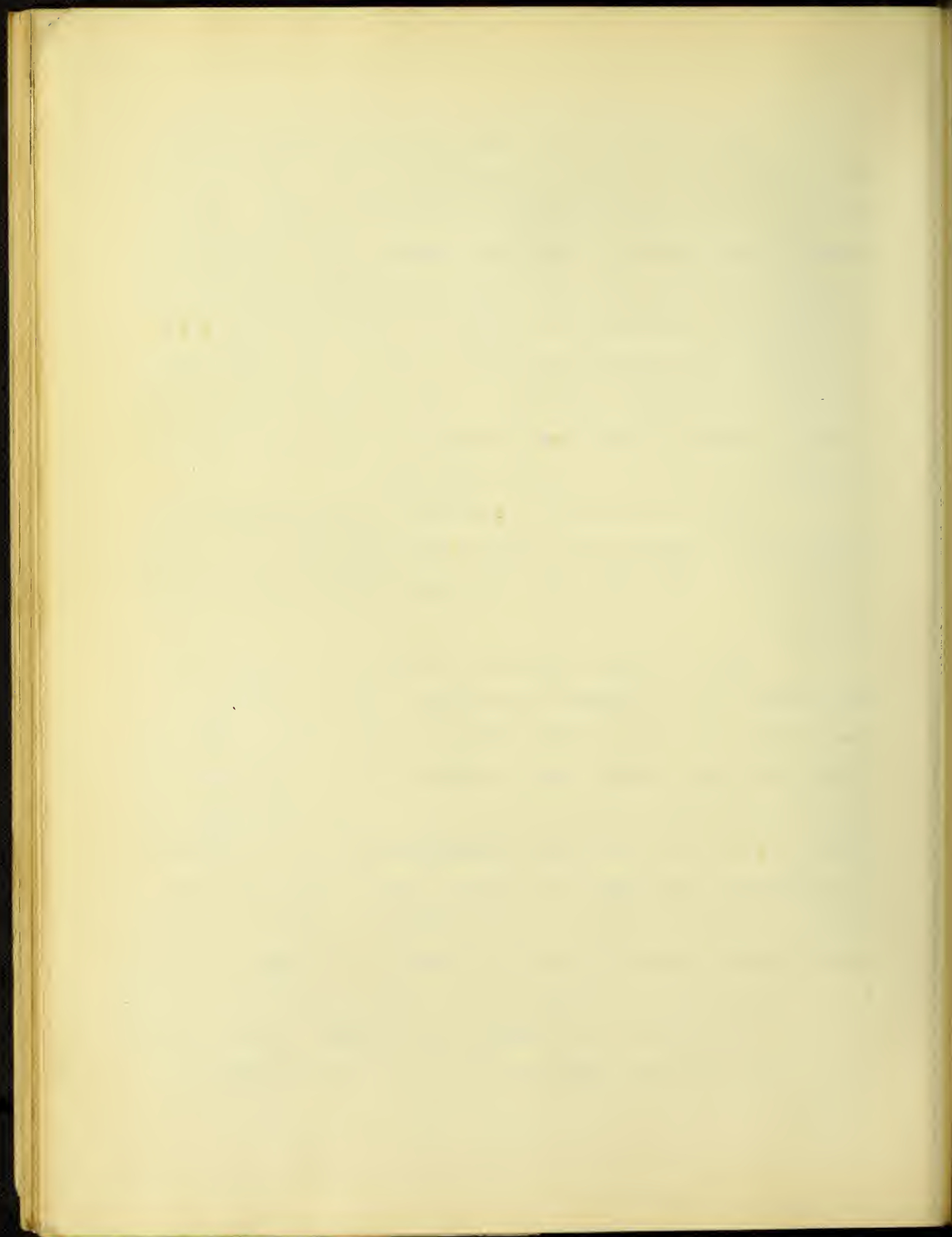




When the weather was cold a large galvanized iron pan was placed over the lights and filled with water. This was to assist in keeping the temperature up during the nights. For doors two large sheets of canvas were used. These were three by six feet when folded; the loose edges were tacked to the edge of the germinator, and when it was desired to close the front, the canvas flaps were hooked into place by means of cord loops, each over-lapping the other two thirds. Over the exterior were tacked two large sheets of card board to assist in regulating the heat and to give the exterior a better appearance.

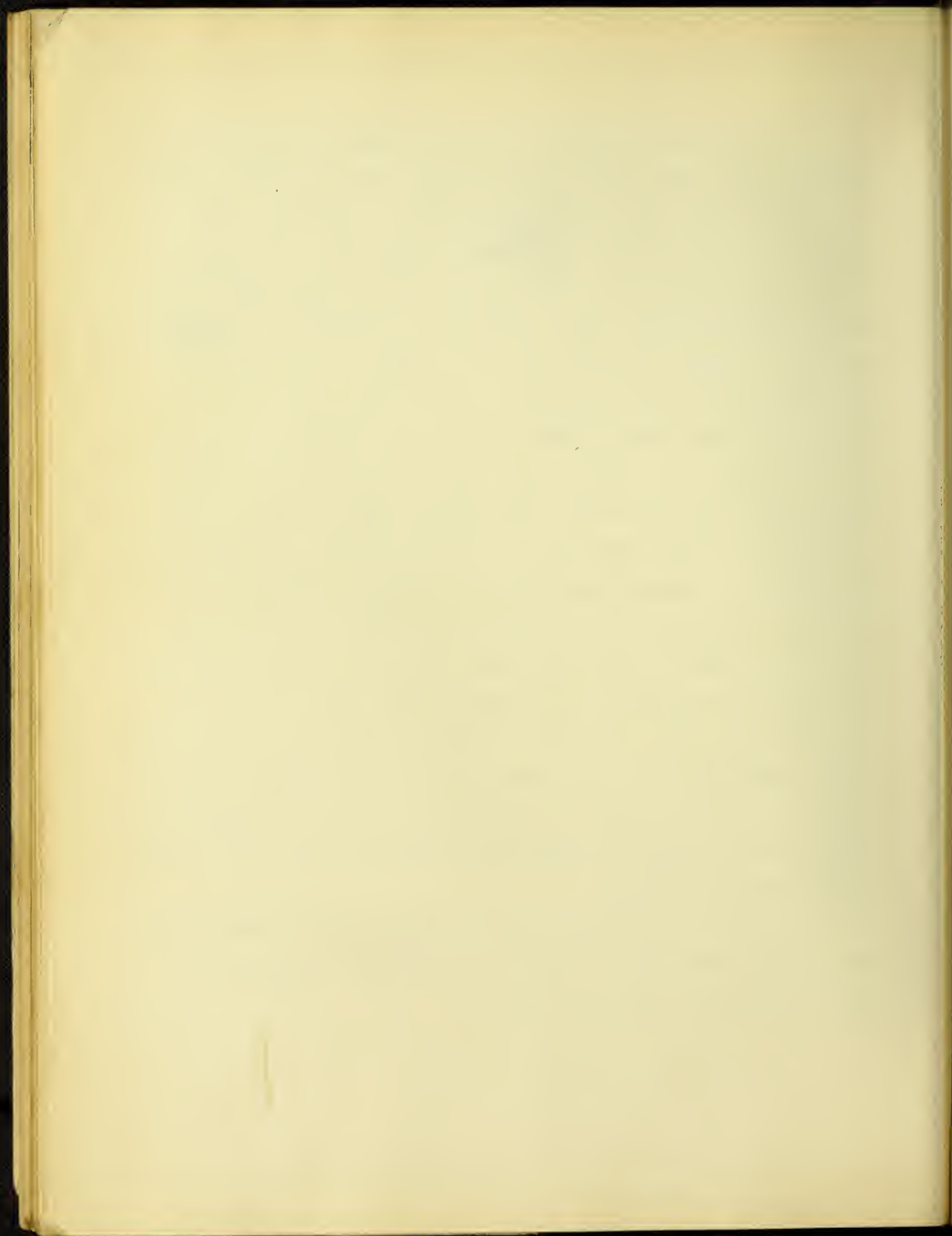
The following extract taken from a letter dated March 9, 1903 by Edgar Brown who has charge of the seed laboratory at Washington, D. C. shows that they are using a similar piece of apparatus.

"We are using a form of germinator which is very much more simple than the Standard germinator. This consists of a heavy wooden box with a copper tank set in the bottom. This is filled with water and the heat is applied from the under side, the vapor from the water keeping the blotters, in which the seeds are placed, moist during the time of ⁱⁿ⁻germination. This is an expensive apparatus, and seems to be fully as well adapted for seed testing as the more expensive copper chamber." There is no difference between these two methods of testing. The method mentioned in the above extract is briefly this: The seeds are laid on blotting paper on shelves in the chamber, and the whole interior of the chamber has to be kept sufficiently moist so that the seeds will not dry out.



The method employed in this investigation briefly is as follows: Two large plates are used to form the germinator; these are of stoneware eight inches in diameter. The upper plate should be a little longer and ^{over} ~~under~~hang the under. In this are placed the blotters which are cut into squares six by six^{inches}, and moistened by dipping into a plate of water, and allowing the surplus to drain off. Then the sample number is marked in the corner with an indelible pencil and the seeds spread in the middle of the blotter, the whole being covered with a second blotter of the same size. Usually five samples were placed in each plate, but with larger seeds only one sample and duplicates were placed in each. A sample and its duplicate were not placed in the same plate as a rule, but in a separate plate which occupied a position in the germinator as close to its companion as possible. In removing the sprouted seeds it was found easier to have a clean plate handy and place the samples on it in reversed order, thus saving handling twice each day. It will be noticed that each pair of plates forms a separate germinator of small size and all that is required of the germinating chamber is to maintain the required temperature which was satisfactorily accomplished in the chamber used as shown by the temperature record.

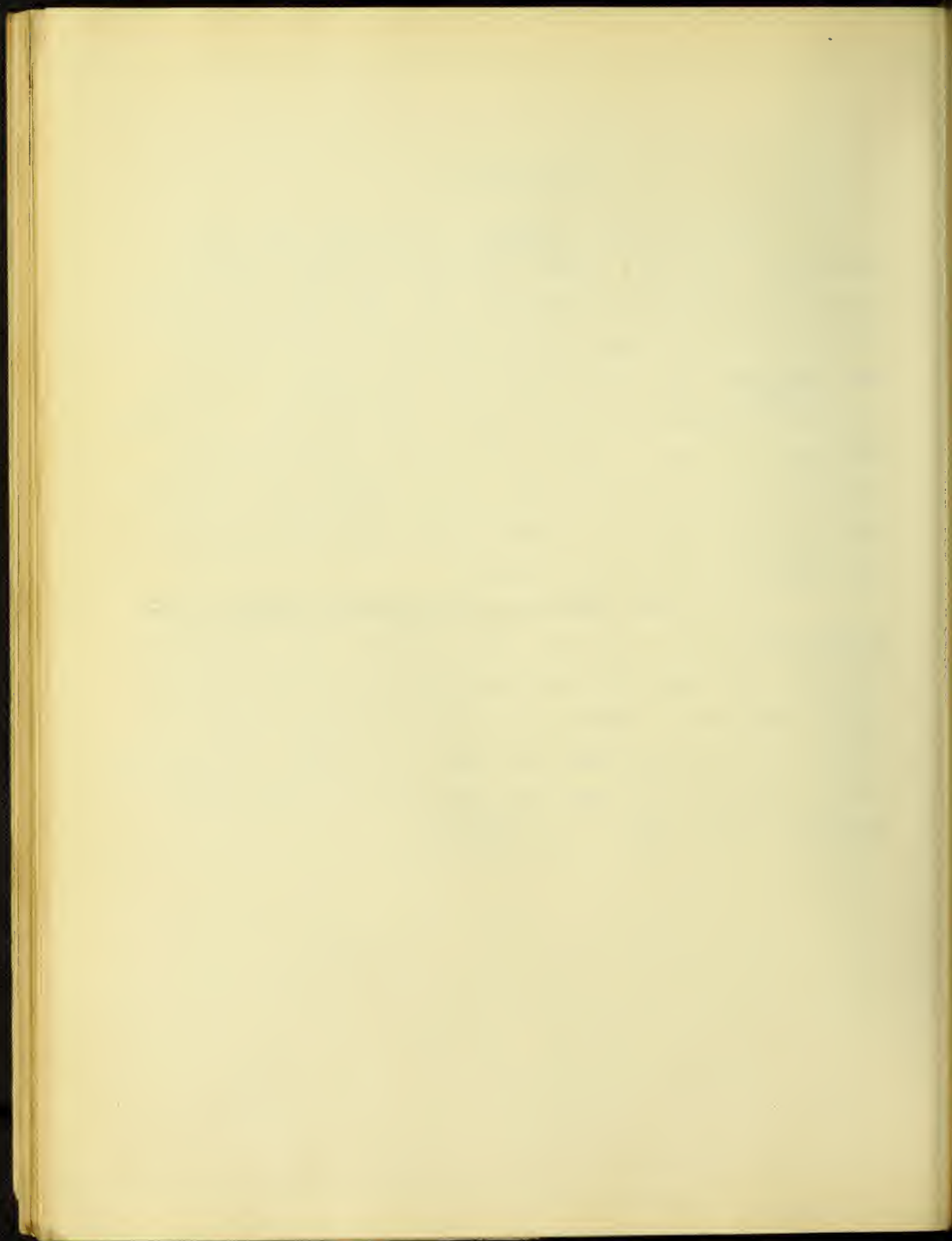
Another form of germinator used for Peas and Wax Beans was a large Geneva Pan. This form is described in the North Carolina Bulletin 108, Page 400:



- Geneva Pan -

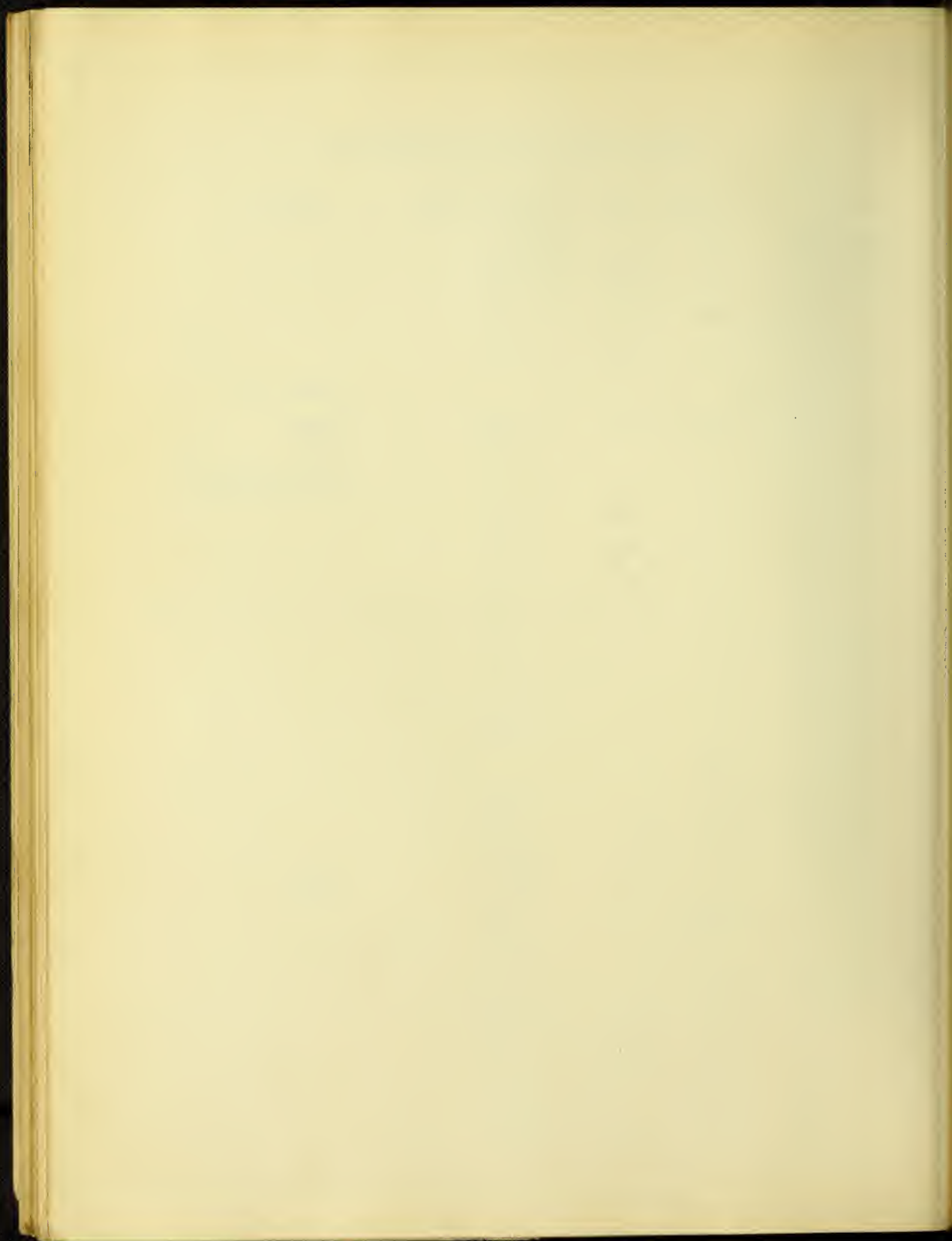
"This apparatus, originated by the Geneva (New York) Agricultural Experiment Station, consists of a copper reservoir about 9 X 14 inches and 3-1/2 inches deep. This has a shoulder or shelf along the two longer sides, about 1/2 inch from the top. Resting ^{on} this shelf, stiff brass wires run crosswise of the reservoir and ^{su}port pockets of cotton flannel, fuzzy side out, into which the seeds are placed. Water is then poured into the reservoir, sufficient just to touch the bottom of the pockets, and a cover of metal or glass slides into a groove in the top of the reservoir, thus completely shutting out the air."

The following tables show the temperature record of the germinators for the time it was used in testing. The thermometers used, were a standardized Green's thermometer and a self-recording minimum thermometer. Readings were usually observed on both, but those of the recording thermometer only were recorded. The records are not complete in all cases, but these are sufficient readings to obtain an accurate idea of the temperature.



-Temperature Record of Germinator-

Date	A. M.	M.	P. M. (4-5)	Remarks
March 31	75			
April 1	65	77	78	
2	70	76	80	
3	72	76	79	
4				Water 82
5	50	59	74	Water
6	54		84	Room cold, poor Germinations.
7	63		75	
8	68		90	
9	65		84	
10	75		83	
11	78		83	
12	73		82	
13	72		74	
14	74			
15	68		78	
16	65	82	92	
17	69	93	103	Water
18	71		94	
19			88	
20	68		65	
21	73	109	95	
22	70	90	95	
23	65		81	
24	67	87	86	



	A. M.	M.	P. M.	
	25	69		83
	26	65		85
	27	65		87
	28	68		87
	29	69		88
	30	72		88
May	9			78
	10	73		
	11	73		84
	12	73		
	13	85		
	14	72		90
	15	71		83
	16	72		83
	17	73		88
	18	75		89
	19	78		89
	20	76		85
	21	76	89	86
	22	76		
	23	77		

Min. 62 reset.

7:30 A.M.

Geneva Apparatus.

June	10	78		90	3-4 P. M.
	11	73			
	12	67	75	78	
	19	75	85		
	20	76	86		
	22	75		85	



A. M. M. P. M.

Daily run of 72 to 83

July	21	76	86	83
	22			
	23	78	84	84
	24	78		
	27	82	87	92
	28	84	84	
	29		84	86
	30	79		
	31	78		

August	1	72		85
	3		80	
	4	75	95	88
	5		82	
	6	78		
	7	75		
	8	76	92	
	9	76	88	
	10	--	--	--
	11	81	80	90
	12		76	
	13	72		80
	14		73	
	15	78		
	17	75		78

Sept.	24	68		75	Minn.
	25	71	76	91	63

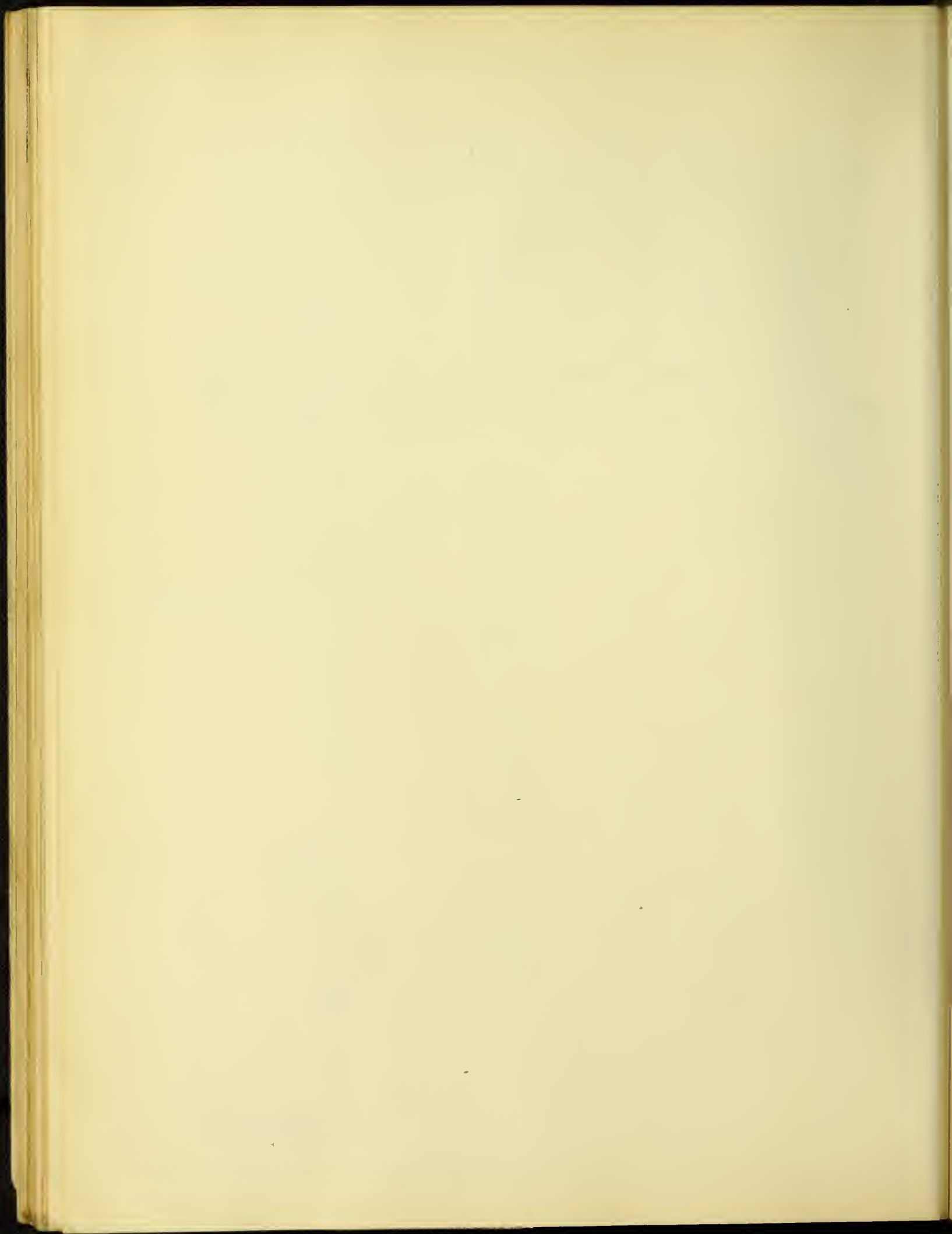
90



	A.M.	I.	P.M.	Minn.
Sept. 26	82		90	
27	--		--	
28	67		90	62
29	70		93	61
30	73		88	60

During the summer months no heat was used, and its temperature could not be controlled beyond keeping the front flues closed.

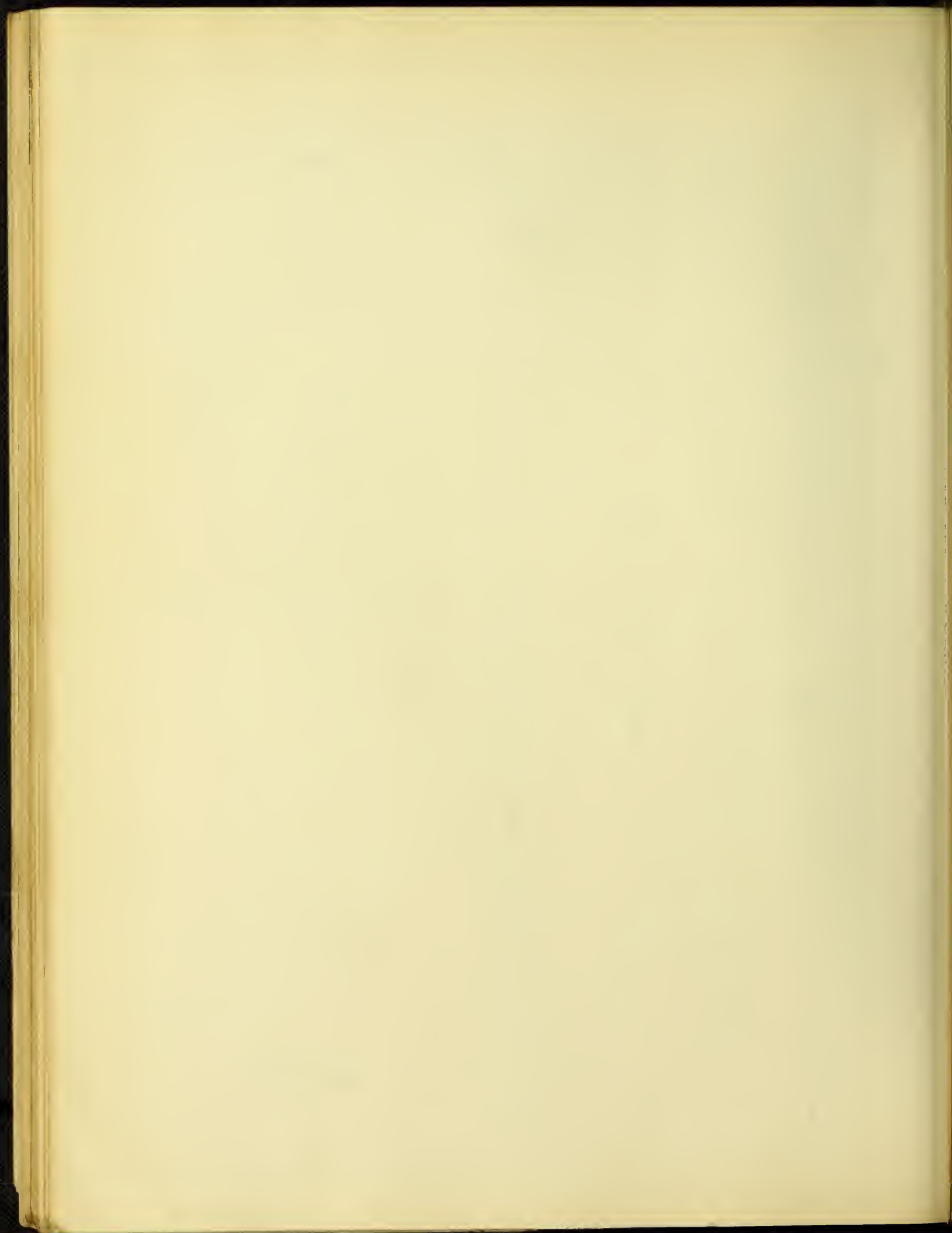
Oct. 1	74		95	
2			85	
3	76		95	74
4				No heat on Sunday.
5	75		84	72
6	74		87	72
7	75	88	82	70
8	75		84	62
9	69	89	87	
10	70	88	75	
11				Sunday
12	66	89	91	64
13	70	89	88	
14	70		90	
15	68	88		64
16				
17	71		94	
18	67			At 10 A.M. to 7 P.M.



		A.M.	M.	P.M.	Minn.
Oct.	19	71		94	
	20	71		92	
	21	70		85	
	22	73		80	62 Put in water pan and filled.
	23	72		87	
	24	63		73	
	25	63	83	90	58
	27	65			58
	28	62		83	
	29	63		80	
	30	66			
	31	63		73	
Nov.	1	68		70	63
	2	72		84	
	3	72		84	
	4	71		86	70
	5	71			
	6	64		74	
	7	62		76	
	8	58		70	
	9	58		70	
	10	60		76	
	11	68		75	
	12	62		76	
	13	64		70	
	14	64		76	



		A.M.	M.	P.M.	Minn.
Nov.	15	60		72	
	17	62		81	
	18	64			62
	30			72	62
Dec.	1	54		80	
	2	55		75	53
	3	53		73	
	4	56		74	
	5	58	90	72	
	6		55		
	7	50		83	
	8	59	98	73	
	9	60		70	
	10	56	89	76	
	11	60	83	80	
	12	54		73	
	13	64		73	
	14				
	15	65		78	
	16	63		80	
	17	59		70	
	18	53		72	
	19	56		85	
	20				No record
	21	50	80	72	



		A.M.	M.	P.M.	Winn.
Dec.	22	58		78	
	23	58		75	
	24	68		78	
	25				54
	26	65			71
	27				
	28	64		70	
	29	66		75	
	30	68		70	
	31	64	90	81	
Jan.	1				No record
	2	53	85	78	
	3				Sunday
	4	69		89	
	5	71		84	

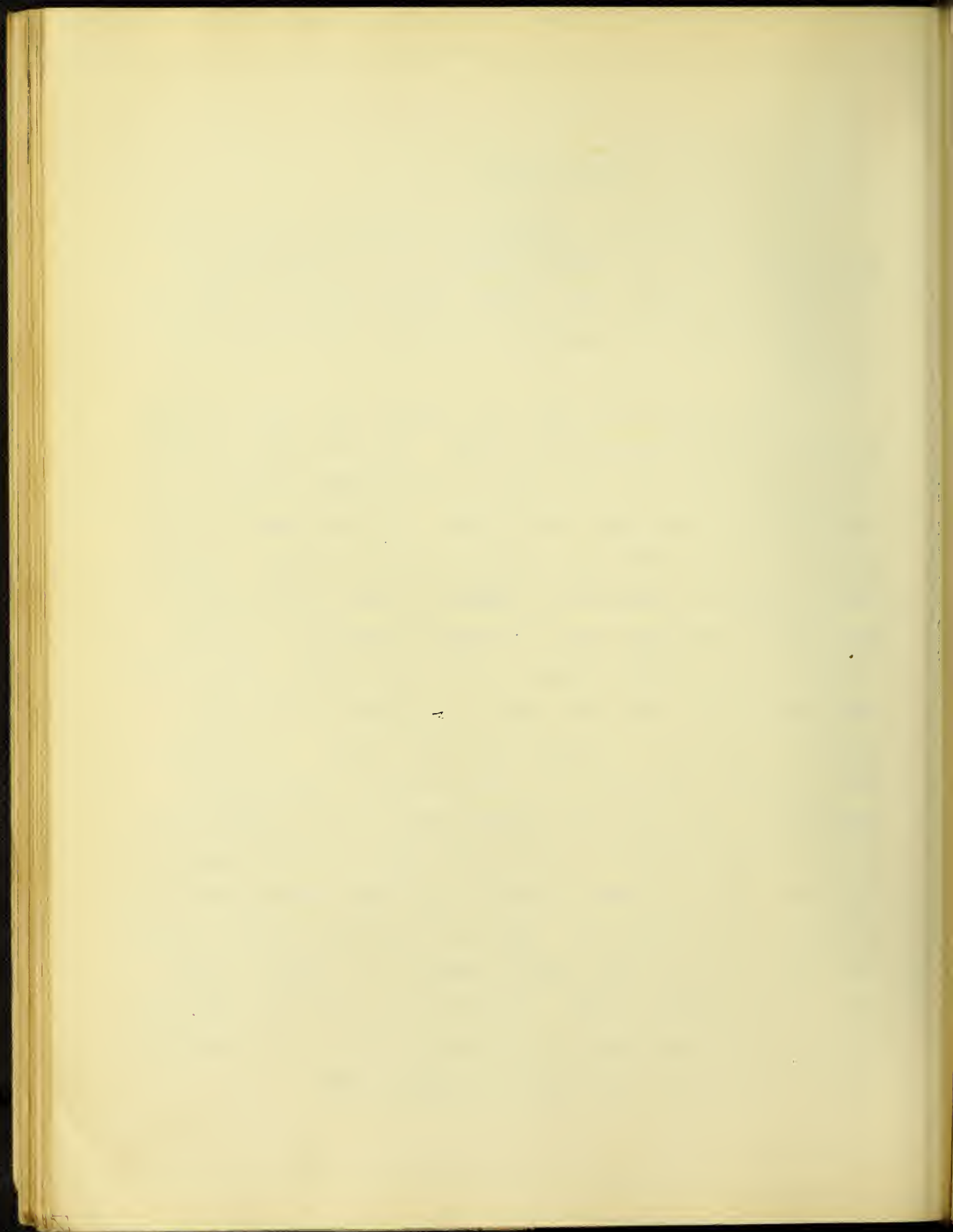
In all these readings the record was made only of the temperature when the electric lamps were turned on in the morning at 7:30 approximately, and when they were turned out in the afternoon, the exact time of which is uncertain, but usually between 5 and 6 P.M. Records were also made of high temperatures in the middle of the day. Steam from the radiator was used to raise the temperature of the water in the pan. There was a small steam radiator in the room which was allowed to run all night in the coldest weather, but of this there is no record.



- Purity Test -

"All chaff, sand, and foreign substances of any nature, even if good seeds of a valuable plant, are to be considered as impurities; also seeds of the genuine species which are broken or have been so injured in thrashing or cleaning that they will not sprout."

The above extract from the Yearbook 1894, page 397 shows what are considered impurities in seeds. But the method of removing the impurities from the seed was a troublesome question, and one which varied with each kind of seed. This was due in a large extent to the care with which the seeds had been cleaned. Sieves were of little assistance as the pieces of broken seed and dirt were mostly of the same size as the seeds themselves, and every sample had to be finally picked out with the forceps. Cabbage and other seeds of that type were spread out on glass plates and a celluloid brick used to separate the broken seeds. All samples were poured over the sieves if it would assist in removing the impurities. The accompanying photo shows the arrangement of the two iron stands and the four inch corner glass to receive the impurities. The iron screens used had hard meshes running from four to twenty-eight to the inch. When the impurities were all removed they were placed in a small manilla envelope and sealed, and the date of test stamped on each. Weights were made on the chemical balance to five thousandths of a gram and at the same time the character of the impurity was noted in the weight book.



-Standards of Germination And Purity-

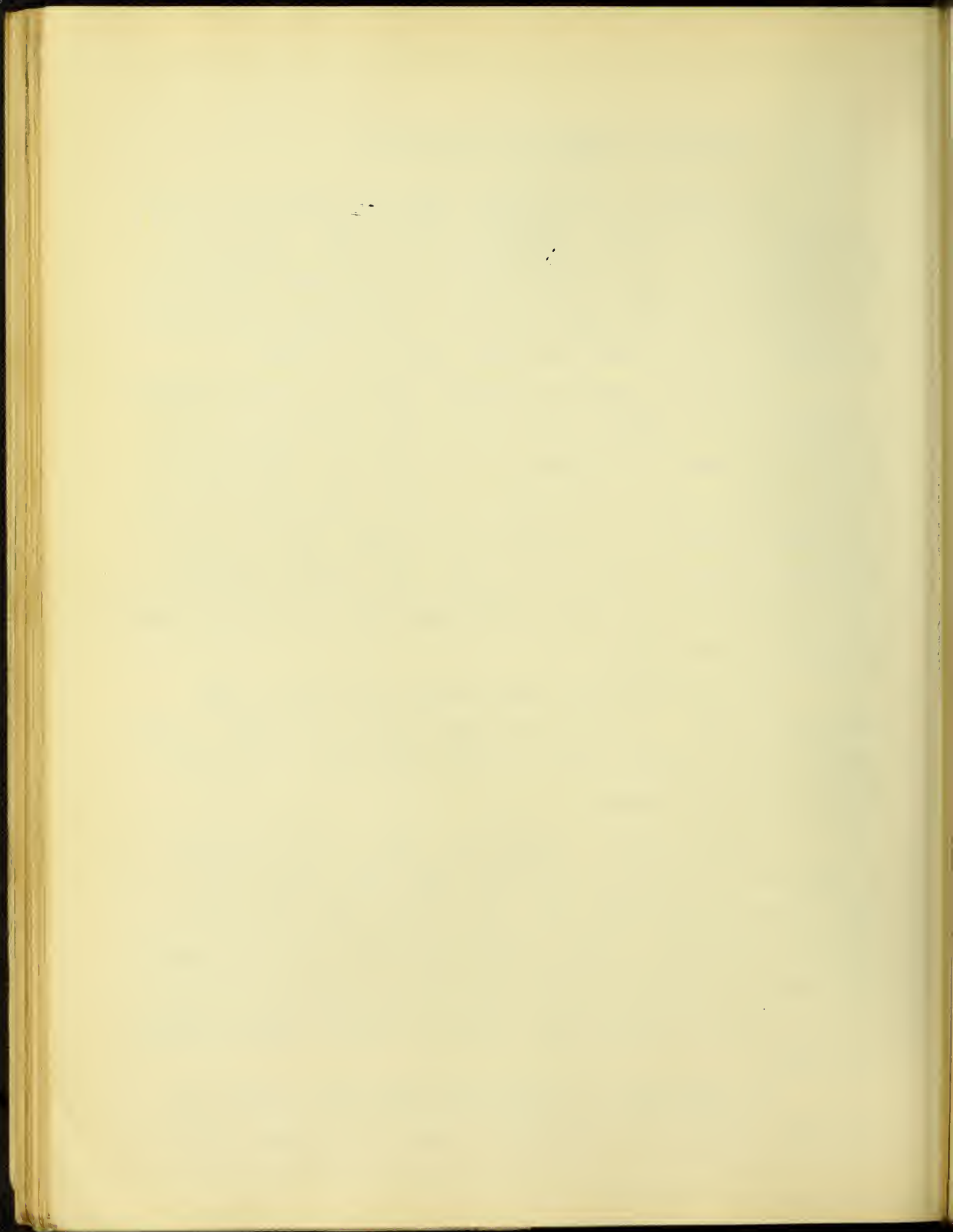
An examination of the three tables of germination given shows that there is little difference between them. The United States Department of Agriculture Tables are the latest obtainable, being received from the seed laboratory at Washington, D. C. this year and in regard to which Mr. Brown states as follows:

"We have no recently published tables giving the standard of germination, but enclose one which was used recently as a guide in purchasing seed for Congressional distribution. The vitality of seeds varies greatly in different seasons, and we have found it practically impossible to establish any standards which could be absolutely adhered to from year to year, but a working standard can be established for each year for each kind of seed used, based on the crop of that year."

The North Carolina tables are from Bulletin No. 108 published in 1894, and are now ten years old and can hardly be used although they are nearly the same as the lower line of the United States Agricultural Tables.

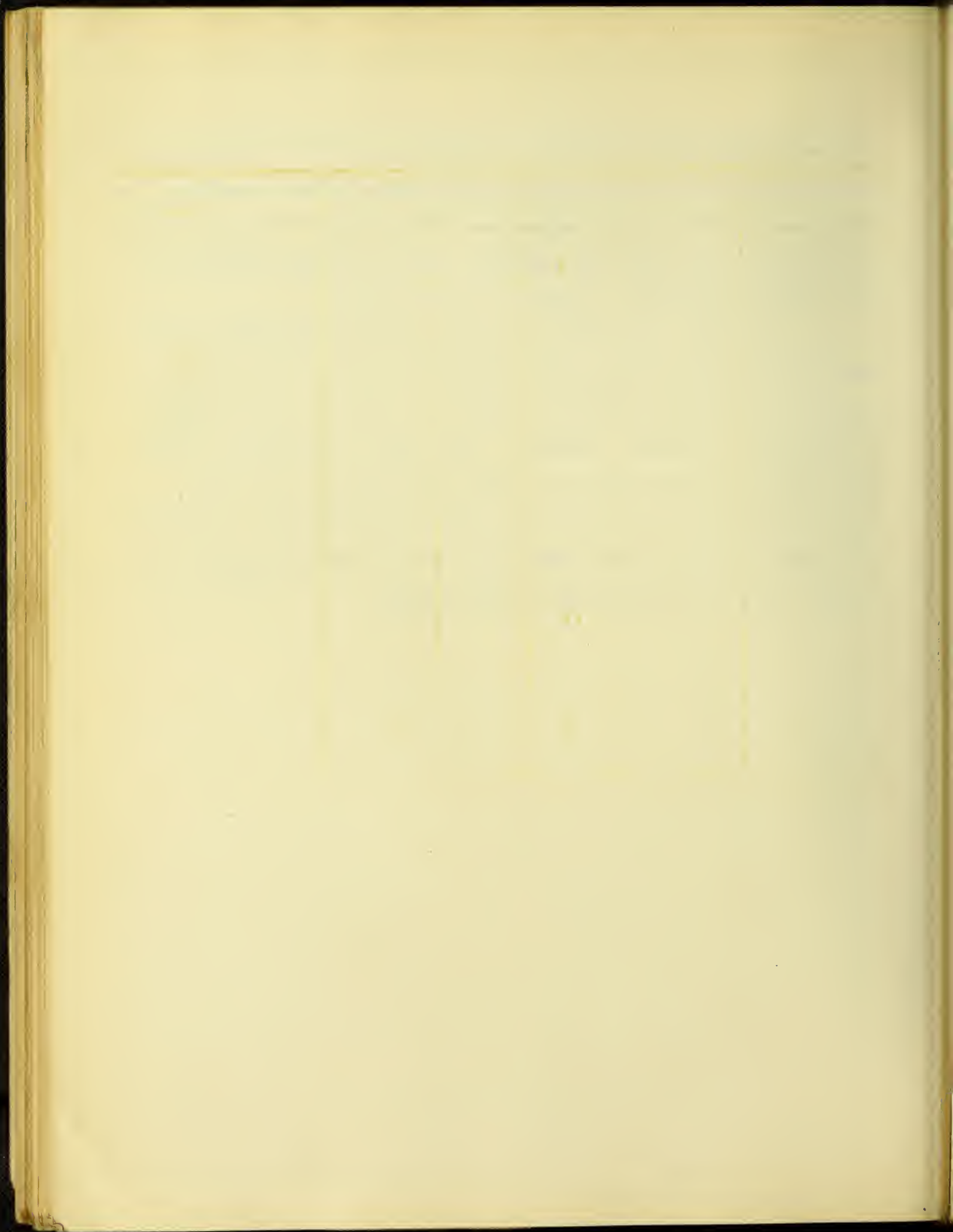
Professor Bailey's tables are given in the "Principles of Vegetable Gardening" and are from a well known "seed house". These tables give what they call or consider "fair" and "good" germination of seeds. These are also older than the first tables but an examination will show that they are approximately the same as the Department of Agriculture Tables, but have a slight tendency to be lower.

The Department of Agriculture tables seem the best for this work because they are the more recent and have more author-



it, behind them then the others. In a few cases the standards of germination seem to be too high for the seeds of 1902, as only a very small portion of the samples are able to meet the requirement. But this only shows that the standard cannot be fixed permanently, but a working standard is required for each year.

Circular 6 Division of Botany entitled "Standards of the Purity and Vitality of Agricultural Seeds", states some of the reasons for having a standard of seeds and the only proper method of obtaining a reliable standard. The basis to determine a standard should be fresh seeds of not more than one year old, and grown, harvested, and stored under favorable conditions, rather than the common method of using commercial seed of varying age and conditions regarding its harvesting and storing.



-Standards of Germination And Purity-

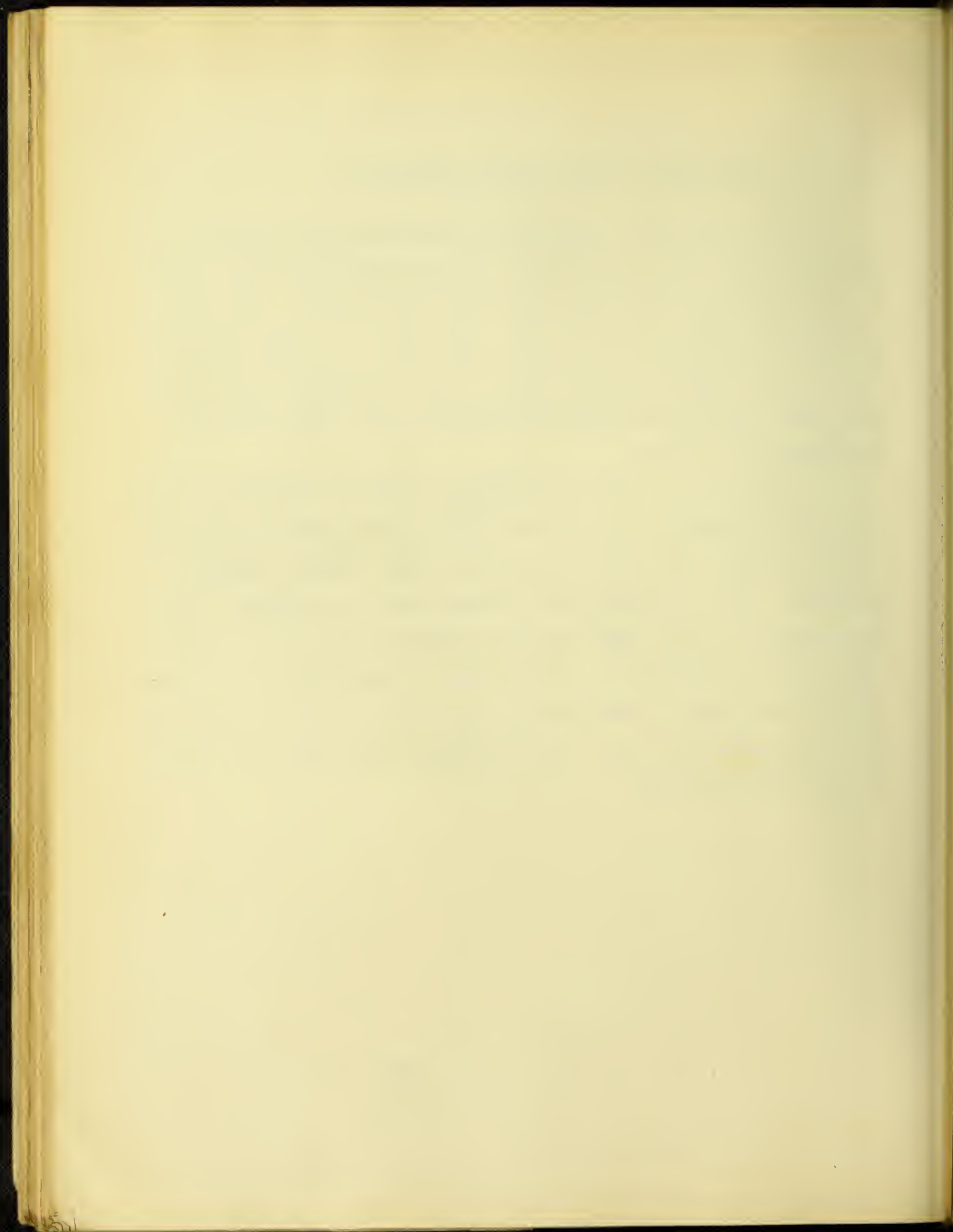
Seed	U.S.D.A.		N.C. Bul. 108		Bailey	
	Germ.	Purity	Germ	Purity	Germ "Good"	Purity "Fair"
Bean-Wax	90-95	99	90	99.5	95	90
Bean-Lima	90-95	99	95	99.5	90	90
Beet	150	99	133	97.5	135	150-150
Cabbage	90-95	99	89	99	90	90
Carrot	80-85	95	59	90.5	70	70
Cauliflower	80-85	99	80	99.5	90	87
Celery	60-65	98	32	99	78	75
Corn-Sweet	85-90	99	-	-	86	85
Cress	85-90	99	-	-	96	90
Cucumber	85-90	99	86	99	85	85
Eggplant	75-80	99	60	99	56	50-60
Endive			94	97	71	70
Kohl Rabi			88	98.5	90	90
Lettuce	85-90	99	77	98	93	90
Melon-Musk	85-90	99	90	99	86	85
Melon Water	85-90	99	89	99	81	80
Onion	80-85	99	85	99	81	85
Parsley	70-75	99	70	98.5	76	75
Parsnip	70-75	99	75	99	71	70
Peas	93-98	99	97	99	96	90
Pepper		90	76	98	66	60
Pumpkin	85-90	99	85	98.5	85	85
Radish	90-95	99	95	99	88	85
Salsify	75-80	98	83	98	83	80
Spinach	80-85	99	89	98	79	75
Squash	85-90	99	90	99	80	80
Tomatoes	85-90	98	80	98	86	80
Turnip	90-95	99	94	99	94	90



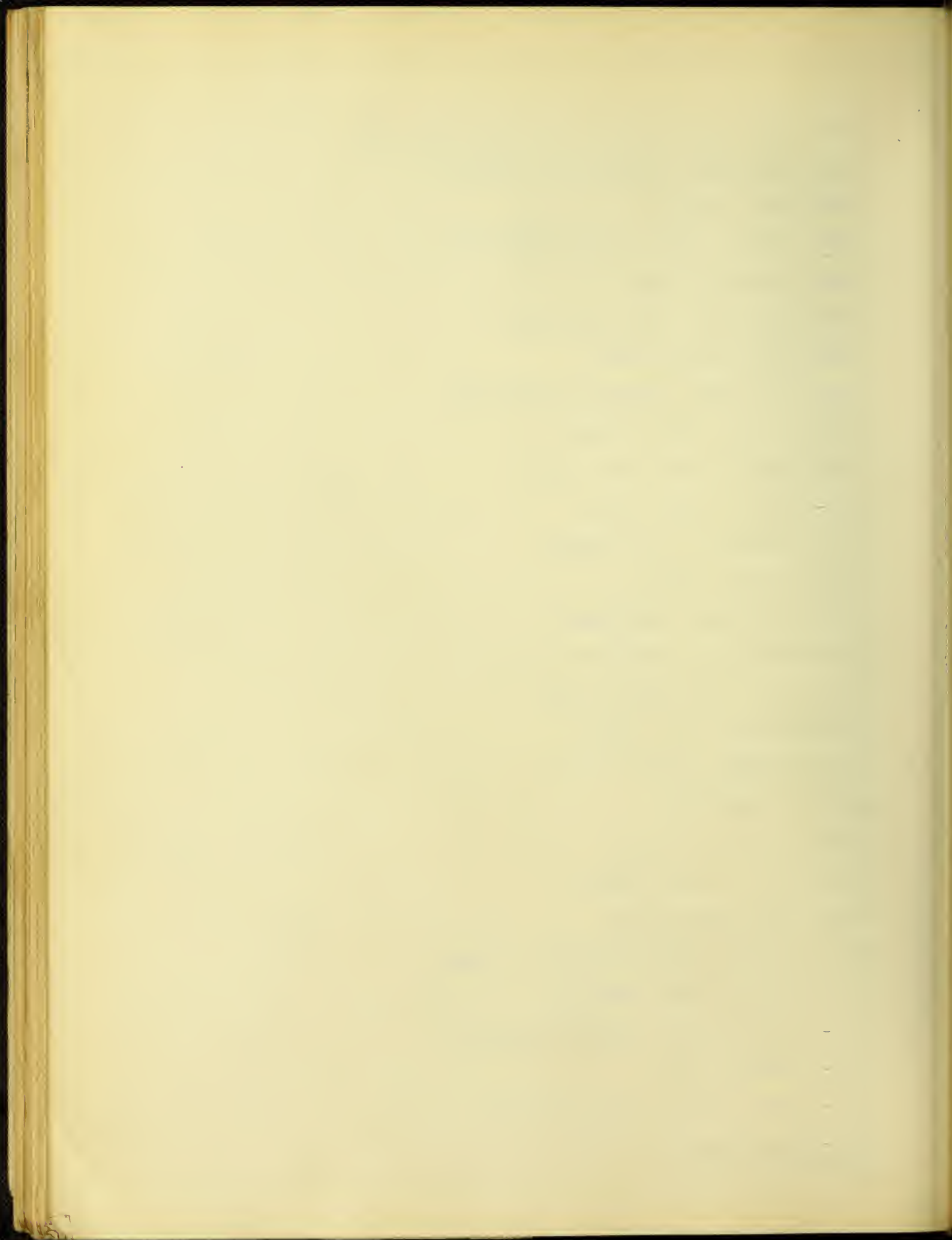
-Varieties of Seeds Used As Standards-

All the seeds used in this experiment were purchased in the open market in the name of R. B. Howe so that the dealer would not have an idea of the purpose of the investigation. The seeds from the commission boxes were all purchased in Champaign and selected by Mr. Beal and myself with a view to obtaining the desired varieties, but this was difficult because of the small range of varieties in the boxes.

In order to have the results as nearly as possible comparable and knowing that some varieties vary in their germinating powers the following list of seeds were selected to be obtained whenever possible? Where the seeds were ordered from the seedsmen, only a few changes had to be made, but in all other cases we had to take the collection as offered. To the list of seeds taken as a standard in this test are prefixed the numbers which were assigned them in the system of numbering. This list will also serve as an index to the table following:



- 99- Beans-Wax, Burpee's Stringless Green Pod
- 100- Beans-Lima, Burpee's Bush Lima
- 200- Beet, Eclipse
- 300- Cabbage, Early Jersey Wakefield
- 400- Carrot, Ox Heart
- 500- Cauliflower, Early Snowball
- 600- Celery, White Plume
- 700- Corn-Sweet, Stowell's Evergreen
- 800- Cucumber, White Spine
- 900- Eggplant, New York Purple
- 1000- Endive, Green Curled
- 1100- Kohl-Rabi, White Vienna
- 1200- Lettuce, Hanson
- 1300- Musk-melon- Rocky Ford
- 1400- Watermelon, Kolb's Gem
- 1500- Onion, Red Wethersfield
- 1600- Parsley, Moss Curled
- 1700- Parsnip, Hollow Crown
- 1800- Pea, Heroine
- 1900- Peppers, Bull Nose
- 2000- Pumpkin, Small Sugar
- 2100- Radish, Chartiers
- 2200- Salsify, Mammoth Sandwich Island
- 2300- Spinach, Long Standing
- 2400- Squash, Golden Summer Crookneck
- 2500- Tomatoe, Stone
- 2600- Turnip, Purple Top Strap Leaf
- 2700- Ruta Baga, Purple Top
- 2800- Cress, Water



-Seedsmen Represented In Test-

The seeds purchased have been divided into classes according to their source as follows:

Class 1.- Illinois seedsmen:

Alneer Bros.,	Rockford	\$1.83
W. W. Barnard Co.,	Chicago	1.90
H. W. Buckbee,	Rockford	2.00
Burroughs Bros.,	El Paso	.60
Elgin Seed Co.,	Elgin	2.60
Great Northern Seed Co.,	Rockford	2.04
S. F. Leonard,	Chicago	2.13
R. H. Shumway,	Rockford	1.68
Vaughan's Seed Store,	Chicago	2.13

Class 2.- Eastern firms for a check:

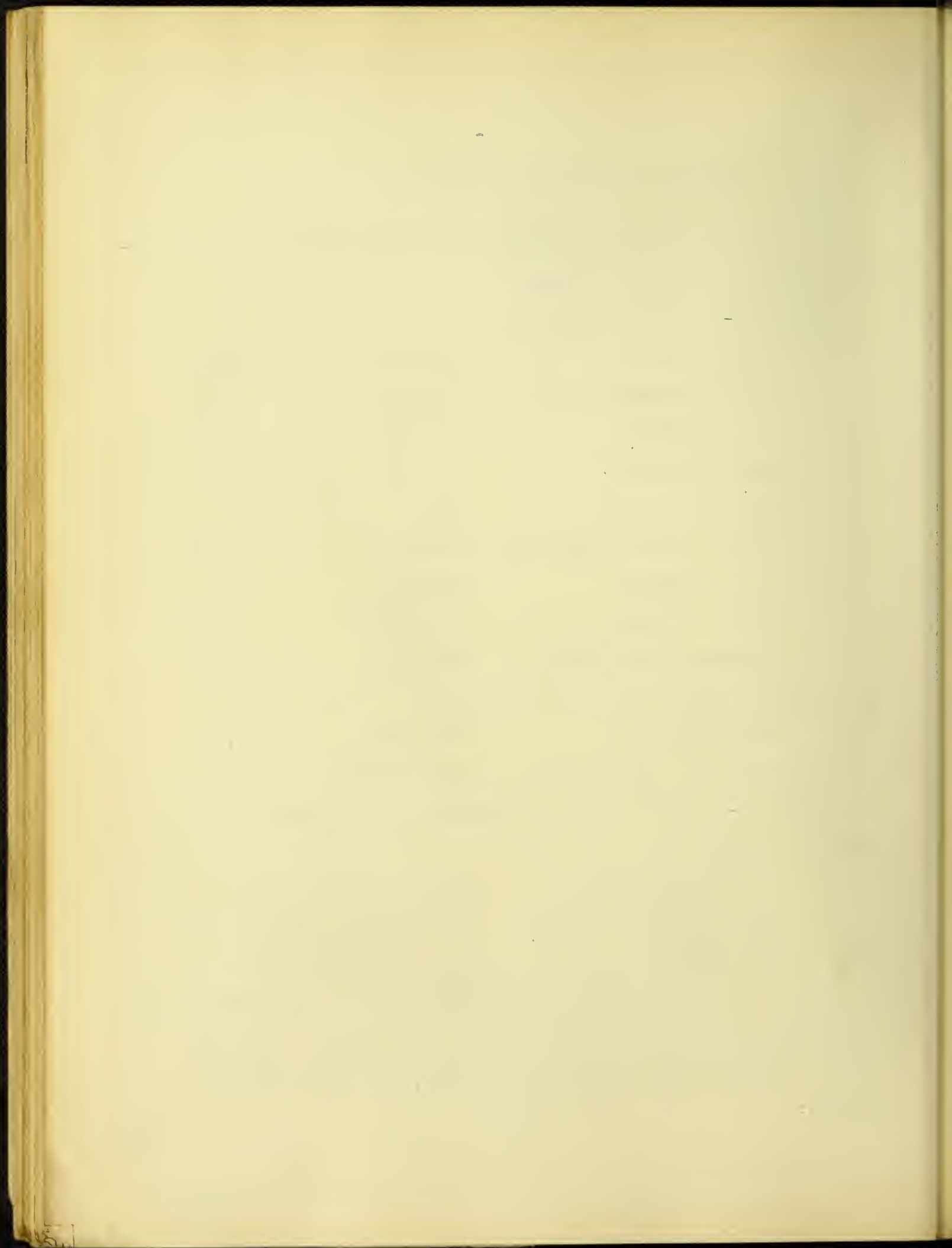
Peter H ^e nderson	New York	2.70
W. Altee Burpee & Co.,	Philadelphia	2.40

Class 3.- Firms from whose commission boxes seeds were obtained in Champaign:

D. M. Ferry & Co.,	Detroit, Mich.
David Landreth & Sons,	Philadelphia, Pa.
L. L. May Co.,	St. Paul, Minn.

three

Orders for the above ^{three} seedsmen for comparison of the same seeds were sent to their home office, and the following three we could not get seeds from because they were wholesale dealers:



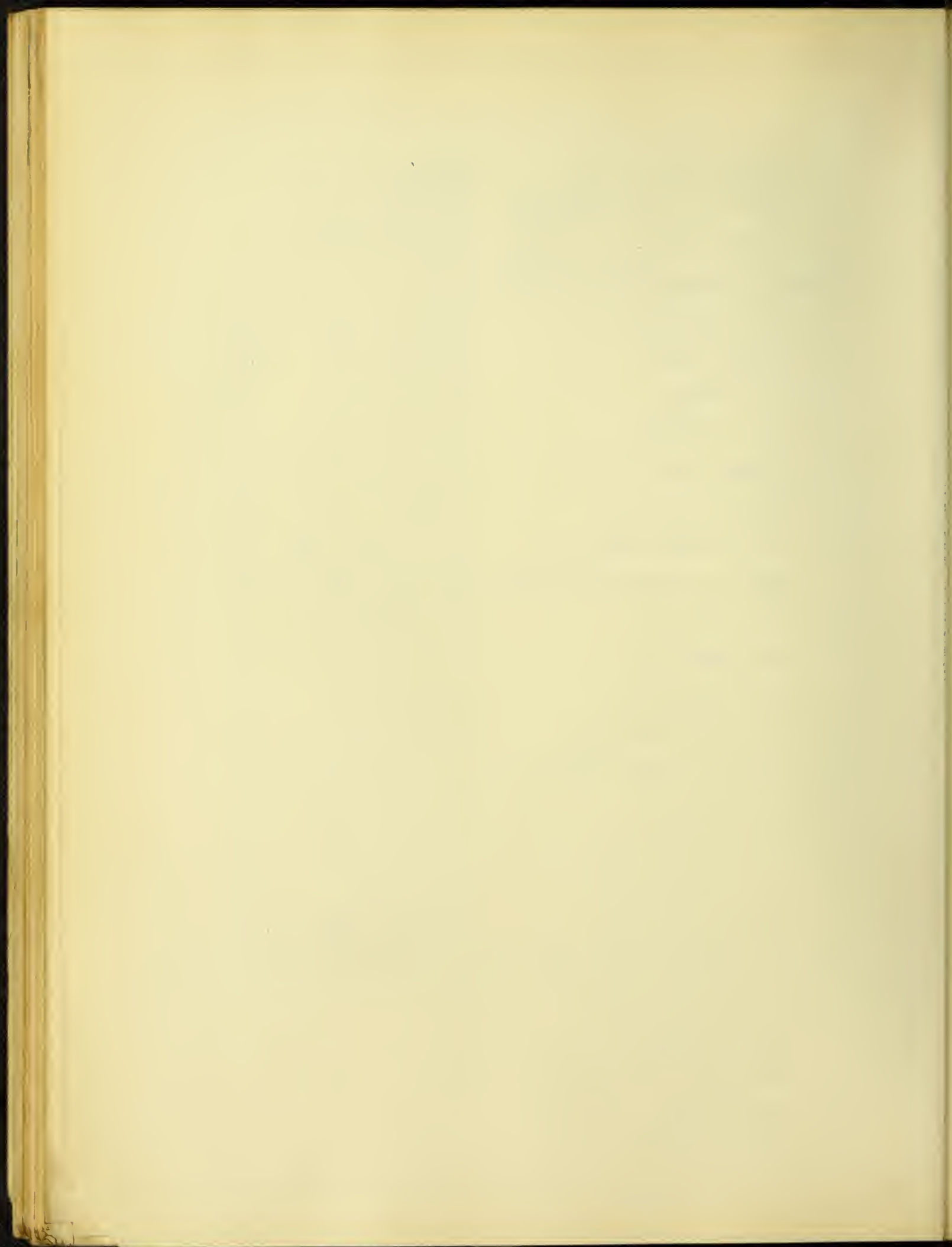
Briggs Bros. & Co.,	Rochester, N. Y.
Jerome B. Rice Seed Co.,	Cambridge, N. Y.
Crosman Bros.,	Rochester, N. Y.

Class 4.- Cheap offers in farm papers:

A. C. Anderson,	Columbus, Neb.	\$.10
Alneer Bros.,	Rockford, Ill.	\$.10
J. J. Bell,	Deposit, N. Y.	.50
H. W. Buckbee,	Rockford, Ill.	.10
Bunker Hill Seed Co.,	Chasleston, Mass.	.10
Forrest Seed Co.,	Cortland, N.Y.	.16
F. C. Graves Seed Co.,	Des Moines, Iowa	.25
Harry N. Hammond Seed Co.,	Bay City, Mich.	1.00
W.J. Haskins,	Bringhamton, N.Y.	.10
Iowa Seed Co.,	Des Moines, Iowa	.25
S.M. Isbell Co.,	Jackson, Mich.	.10
E.W. Hartz Seed Co.,	Grundy Center, Ia.	.15
Missouri Valley Seed Co.,	St. Joseph, Miss.	.50
F.S. Mills,	Rose Hill, N.Y.	.14
J. A. Salzer Seed Co.,	La Crosse, Wis.	.17
L. T. Templin Son	Calla, Ohio	.50
Wernick Seed Co.,	Milwaukee, Wis.	.10

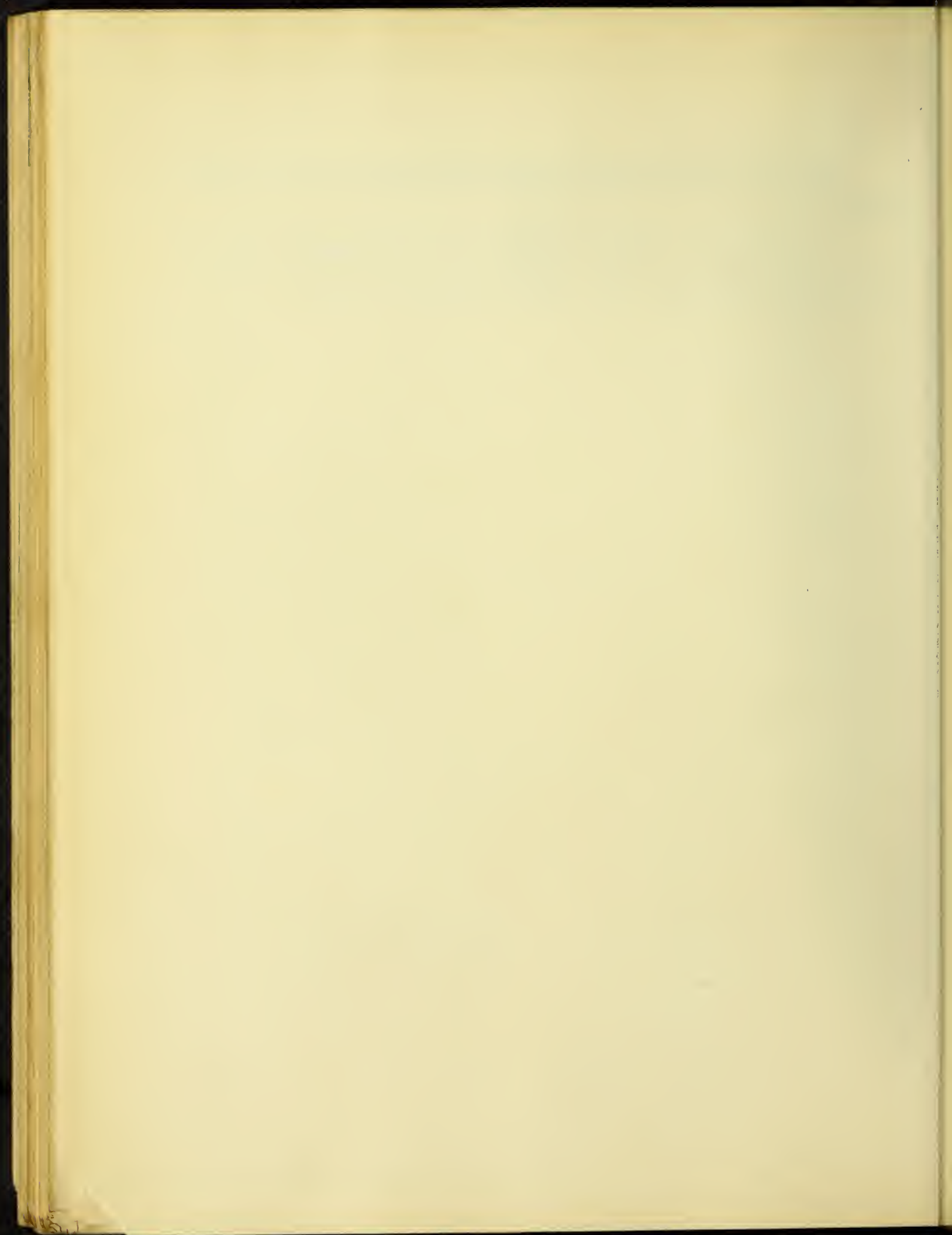
Class 5.- Packet seeds from Chicago Department stores at one cent each:

Boston Store
 The Fair
 Rothschilds
 Siegel Cooper



Class 6.- United States Congressional Distribution and old seeds.

A list of varieties secured from each seedsmen and the results will be found in the tables pages 195 to 330.



- Explanation of Tables -

The balance used in weighing was described in a previous section. All seeds were weighed beyond the limits of accuracy because of the balances used. The balance is accurate to one milligram, and the weights were made accurate to five milligrams. This is far beyond the possibility of an avoirdupois scales, being less than a grain. The impurities were weighed in a like manner, but to three milligrams to get an accurate weight.

The percentage of impurities and real value were made with a four place logarithm table, with ^{out} interpolation so they are accurate to three places. The results obtained in this manner are more accurate than the previous work allows.

In determining the real value ^{the} results were made to the nearest even percent discarding all fractions. This will explain why some seeds with a small amount of impurities still have the same value as the germination-percent.

In making up the form of the tables it is found necessary to put percent of impurities in place of percent of ~~impurity~~ Purity, and to obtain the value of P. it will be necessary to subtract the percent given from 100, and then multiply by V. which is the percent of germination to obtain the true real value.

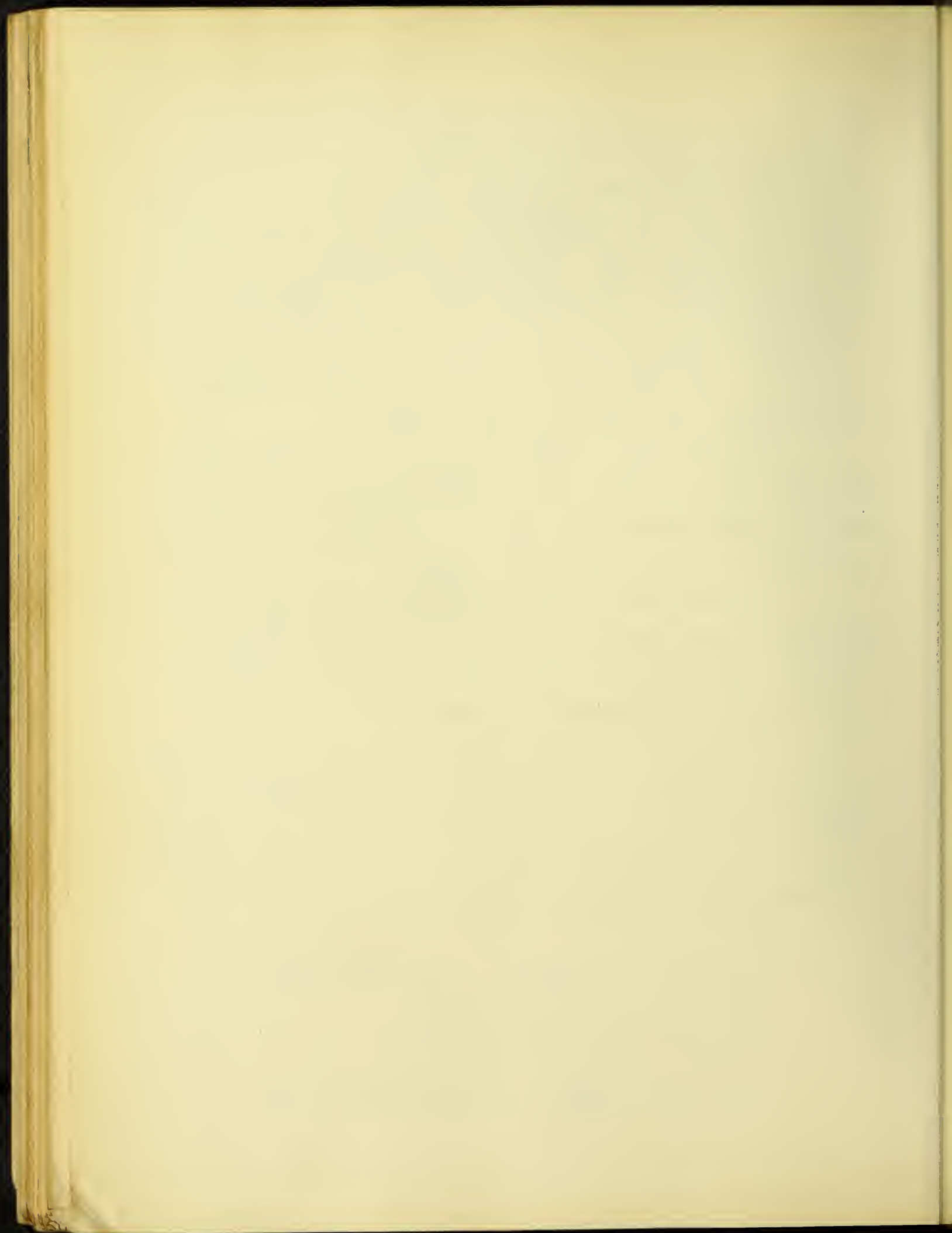
Thus:

Percent of impurities 1.10 (100-1.10=98.90)

Percent of Purity = P. = 98.90

Percent of Vitality = V. = 60.00

$$\text{Real Value} = \frac{P \cdot V}{100} = \frac{98.90 \times 60.00}{100} = 59.39$$



In case two tests were made of seeds, the result was taken which was the most uniform and showed the least variation between duplicates.

In the tables under "Nature of impurities"; B. Seed is used for broken seed, and F. Seed is employed to designate foreign seed unless particular seed is mentioned. Dirt is used to designate all forms of dust and inert matter. Where stone is mentioned it refers to small particles which are easily recognized as such.

Results underlined with red indicate that they are standard according to the germination standard of the United States Department of Agriculture, given on page

Photographs were taken of several varieties of seed, to show the quantity in the package. To do this the seeds were placed in bottles or test tubes of as nearly uniform size as possible and arranged with the high-priced seed at the left, the largest amount in each group also at the left. Seeds were purchased from commission boxes and from the home office of the firm, and were placed together for comparison.

Bush Beans.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
1	Stringless Green Pod-Burpee,	B.seed-inert
2		
3	Burpee's Stringless Green Pod-Henderson,	B.seed
4	Stringless Green Pod-Shumway,	Inert
5	Burpee's New Stringless Green Pod-Alneer,	
6		
7	Stringless Green Pod-Vaughan,	
8	Stringless Green Pod-Leonard,	B.seed
9	New Stringless Green Pod-Buckbee,	B.seed
10	New Stringless Green Pod-Great Northern,	B.seed
11	Stringless Green Pod-Barnard,	B.seed
12	Burpee's Stringless Green Pod-Elgin,	
13	Valentine- Hammond	
14	M.V.Stringless Green Pod-Missouri Valley,	B.seed
15	Red ^{ev} Val _{ti} n _e -May,	B./seed
16	Red ^{ev} Val _{ti} n _e -May,	B.seed
17	Early Valentine-Crosman,	B.seed
18	Early Valentine-Ferry,	Inert
19	Lightning Earliest Red Valentine-Rice,	
20	Golden Wax,Wernick,	
21	Early Red Valentine-U.S.Dept.Agriculture,	

Bush Beans.

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
1	<u>.13</u>	60.00	.00	.000	3	<u>100.00</u>	100.00
2		53.00	.482	.900			
3	.10	205.00	.8168	.398	3	<u>95.00</u>	94.63
4	.10	163.00	.088	.054	2	91.00	90.55
5	.12	160.00	.098	.061	2	65.00	64.90
6		91.00	.00	.000			
7	.10	86.00	.000	.000	4	67.00	67.00
8	.10	249.00	.810	.325	4	<u>93.00</u>	92.70
9	.12	171.00	1.915	1.15	4	<u>91.00</u>	90/10
10	.12	215.00	2.165	1.10	4	60.00	59.39
11	.10	241.00	.6512	.270	2	<u>91.00</u>	90.74
12	.18	258.80	.000	.000	4	89.00	89.00
13	.10	43.00	.000	.000	4	62.00	62.00
14	.02	53.00	.2403	.453	2	84.00	83.61
15	.05	34.5	.2441	.707	2	<u>96.00</u>	95.30
16.5	.05	36.5	2.0068	5.48	3	<u>92.00</u>	86.92
17	.10	194.00	.3524	.1815	4	47.00	46.90
18	.10	183.00	.3922	.214	4	75.00	74.83
19	.10	123.00	.000	.000	4	<u>94.00</u>	94.00
20	.033	22.5	.000	.000	3	<u>100.00</u>	100.00
2 gratis		84.00	.000	.000		No test.	

10.00	1	100.	100.	100.00	100.	1
10.00	2	100.	100.	100.00	100.	2
10.00	3	100.	100.	100.00	100.	3
10.00	4	100.	100.	100.00	100.	4
10.00	5	100.	100.	100.00	100.	5
10.00	6	100.	100.	100.00	100.	6
10.00	7	100.	100.	100.00	100.	7
10.00	8	100.	100.	100.00	100.	8
10.00	9	100.	100.	100.00	100.	9
10.00	10	100.	100.	100.00	100.	10
10.00	11	100.	100.	100.00	100.	11
10.00	12	100.	100.	100.00	100.	12
10.00	13	100.	100.	100.00	100.	13
10.00	14	100.	100.	100.00	100.	14
10.00	15	100.	100.	100.00	100.	15
10.00	16	100.	100.	100.00	100.	16
10.00	17	100.	100.	100.00	100.	17
10.00	18	100.	100.	100.00	100.	18
10.00	19	100.	100.	100.00	100.	19
10.00	20	100.	100.	100.00	100.	20
10.00	21	100.	100.	100.00	100.	21
10.00	22	100.	100.	100.00	100.	22
10.00	23	100.	100.	100.00	100.	23
10.00	24	100.	100.	100.00	100.	24
10.00	25	100.	100.	100.00	100.	25
10.00	26	100.	100.	100.00	100.	26
10.00	27	100.	100.	100.00	100.	27
10.00	28	100.	100.	100.00	100.	28
10.00	29	100.	100.	100.00	100.	29
10.00	30	100.	100.	100.00	100.	30
10.00	31	100.	100.	100.00	100.	31
10.00	32	100.	100.	100.00	100.	32
10.00	33	100.	100.	100.00	100.	33
10.00	34	100.	100.	100.00	100.	34
10.00	35	100.	100.	100.00	100.	35
10.00	36	100.	100.	100.00	100.	36
10.00	37	100.	100.	100.00	100.	37
10.00	38	100.	100.	100.00	100.	38
10.00	39	100.	100.	100.00	100.	39
10.00	40	100.	100.	100.00	100.	40
10.00	41	100.	100.	100.00	100.	41
10.00	42	100.	100.	100.00	100.	42
10.00	43	100.	100.	100.00	100.	43
10.00	44	100.	100.	100.00	100.	44
10.00	45	100.	100.	100.00	100.	45
10.00	46	100.	100.	100.00	100.	46
10.00	47	100.	100.	100.00	100.	47
10.00	48	100.	100.	100.00	100.	48
10.00	49	100.	100.	100.00	100.	49
10.00	50	100.	100.	100.00	100.	50

- Beans, Wax -

Germination Standard 90-95 percent. Date of test, June 18, 1903.

Purity Standard 99 percent. Date of test, June 12, 1903.

Date weighed, May 9, 1903. Range of temperature 72°-90°.

Number of seeds per test, 50. Method of testing, blotting paper.

Nearly all samples of beans were badly infested with a weevil, November 20, 1903. (*Bruckus pisi*).

No. 4. Was very light in color in comparison with other samples of stringless greenpod.

No. 6. Very dirty. Weevils made their appearance in large numbers, June 12, 1903.

No. 12. Could not tell very much about the purity of this sample because package was broken when received.

No. 13. Sample was riddled with weevil holes. 458 weevils were counted in 150 seed.

No. 16. Seed had a poor appearance.

Samples 21 and 27 became mixed and no germination test was made.

2-Bush Beans.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
22	Earliest Red Valentine-Templin,	
23	Dwarf Black Wax-May,(1902)	B.seed
24	Imp'd Golden Wax-Hammond,	B.seed
25	Black Wax-F.C.Graves,	
26	Extra Early Round Pod Red Valentine-Ferry, <small>Oydey</small> B.seed	
27	Early Mohawk,Siegle Cooper	B.seed
28	Early Mohawk-Siegel Cooper,	B.seed
29	Refugee-Fair,	
30	Early Refugee-Rothchild's,	B.seed
31	Refugee-Fair,	
32	Early Refugee-Siegel Cooper,	B.seed
33	Early Refugee-Rothchild's,	B.seed
34	Valentine-Boston Store,	
35	Early Mohawk-Siegel Cooper,	B.seed
36	Valentine-Boston Store,	B.seed

2-Bush Beans.

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. P	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. V	Real Value. P.V 100
22.	.02	51.50	.000	.000	2	<u>96.00</u>	96.00
23	.05	35.50	.3678	1.03	0	0000	00 00
24	.10	57.50	.0052	.0094	2	<u>98.00</u>	98.00
25	.012	6.00	.000	.000	-	44.4	44.4
26	.10	85.5	/3925	.460	2	<u>94.00</u>	93.58
27	.01	22.00	2.155	9.82	2	<u>94.00</u>	84.79
28	.01	26.5	.0585	.221	2	<u>96.00</u>	95.80
29	.01	25.0	.000	.000	3	<u>92.00</u>	92.00
30	.01	26.00	.079	.304	3	68.00	66.30
31	.01	27.50	/494	.18	2	68.00	68.00
32	.01	24.5	.000	.0000	3	<u>90.00</u>	90.00
33	.01	24.00	.055	.0299	3	68.00	66.30
34	.01	23.0	.000	.000	3	88.00	88.00
35	.01	24.0	.205	.855	3	<u>96.00</u>	95.15
36	.01	22.0	.102	.464	2	<u>96.00</u>	95.50

Lima Beans.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
101	Burpee's Bush Lima-Shumway,	B.seed
102	Burpee's Bush Lima-Vaughan,	B.seed
103	Burpee's Bush Lima-Vaughan,	B.seed
104	Burpee's Bush Lima-Burpee,	B.seed
105	Burpee's Bush Lima-Burpee,	B.seed
106	Burpee's Bush Lima-Barnard,	
107	Burpee's Bush Lima-Leonard,	B.seed
108	Burpee's Bush Lima-Buckbee,	
109	Burpee's Bush Lima-Henderson,	B.seed
110	Burpee's Bush Lima-Alneer,	
111	D.White Lima-Burroughs,	
112	Burpee's Bush Lima-Great Northern,	B.seed
113	Burpee's Bush Lima-Missouri Valley	
114	Burpee's Dwarf Bush Lima-Briggs,	
115	Dwarf Large White Lima- (box) Ferry,	B.seed
116	Burpee's Bush Lima-Elgin,	
117	Dwarf Large White Lima-Ferry(order)	
118	Henderson's Bush Lima-Rothchild's,	
119	King of The Garden Lima-Siegel Cooper,	
120	Henderson's Bush Lima-Rothchild's,	
121	Henderson's Bush Lima- Boston Store,	
122	King of The Garden Lima-Siegel Cooper,	

Lima Beans.

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
101	.12	156.00	.775	.497	6	50.00	49.75
102	.10	73.5	2.338	3.18	6	14.00	13.56
103	.10	72.5	1.94	2.675	6	14.00	13.63
104	.15	62.5	.335	.536	6	34.00	33.85
105	.15	68.0	.950	1.40	6	16.00	15.53
106	.10	243.0	.000	.000	11	8.0	8.00
107	.15	271.0	3.940	3.47	6	19.00	18.40
108	.12	159.0	.000	.000	11	4.175	4.175
109	.10	174.0	2.602	1.49	6	3.0	2.95
110	.12	162.0	.000	.000	6	1.00	1.00
111	.12	76.50	.000	.000	6	2.00	2.00
112	.14	226.0	2.195	.973	11	15.00	14.85
113	.02	27.8	.000	.000	11	40.00	40.00
114	.10	48.0	/00	.00	6	32.00	32.00
115	.10	117.0	2.600	1.45	6	6.00	4.91
116	.18	253.0	.000	.000	11	10.00	10.00
117	.10	74.0	.209	.282	6	12.0	11.96
118	.01	23.0	.000	.000	4	74.00	74.00
119	.01	25.5	.000	.000	6	35.00	35.00
120	.01	26.0	.000	.000	6	77.60	77.60
121	.01	27.5	.000	.000	4	64.10	64.10
122	.01	22.0	.000	.000	4	20.00	20.00

100	100.00	100.00	100.00	100.00	100.00	100.00
101	101.00	101.00	101.00	101.00	101.00	101.00
102	102.00	102.00	102.00	102.00	102.00	102.00
103	103.00	103.00	103.00	103.00	103.00	103.00
104	104.00	104.00	104.00	104.00	104.00	104.00
105	105.00	105.00	105.00	105.00	105.00	105.00
106	106.00	106.00	106.00	106.00	106.00	106.00
107	107.00	107.00	107.00	107.00	107.00	107.00
108	108.00	108.00	108.00	108.00	108.00	108.00
109	109.00	109.00	109.00	109.00	109.00	109.00
110	110.00	110.00	110.00	110.00	110.00	110.00
111	111.00	111.00	111.00	111.00	111.00	111.00
112	112.00	112.00	112.00	112.00	112.00	112.00
113	113.00	113.00	113.00	113.00	113.00	113.00
114	114.00	114.00	114.00	114.00	114.00	114.00
115	115.00	115.00	115.00	115.00	115.00	115.00
116	116.00	116.00	116.00	116.00	116.00	116.00
117	117.00	117.00	117.00	117.00	117.00	117.00
118	118.00	118.00	118.00	118.00	118.00	118.00
119	119.00	119.00	119.00	119.00	119.00	119.00
120	120.00	120.00	120.00	120.00	120.00	120.00
121	121.00	121.00	121.00	121.00	121.00	121.00
122	122.00	122.00	122.00	122.00	122.00	122.00
123	123.00	123.00	123.00	123.00	123.00	123.00
124	124.00	124.00	124.00	124.00	124.00	124.00
125	125.00	125.00	125.00	125.00	125.00	125.00
126	126.00	126.00	126.00	126.00	126.00	126.00
127	127.00	127.00	127.00	127.00	127.00	127.00
128	128.00	128.00	128.00	128.00	128.00	128.00
129	129.00	129.00	129.00	129.00	129.00	129.00
130	130.00	130.00	130.00	130.00	130.00	130.00

- 100. Beans, Lima. -

Germination Standard 90-95 percent. Date of test, Aug. 4, 1903.

Purity Standard 99 percent. Date of test, Aug. 4, 1903.

Date weighed, July 6, 1903. Range of temperature 72°-95°.

Number of seeds per test, 50. Method of testing, blotting paper.

Re-test, January 9, 1904.

The test of Lima Beans proved a failure in all cases.

The seeds became covered with a dense mould in a day or so and were very dry. It was almost impossible to keep the seeds moist in the blotter, and a second trial in which the seed coats were slit succeeded a little better than the first.

While photographing the shelf slipped and many of the samples spilled, so only a small supply of seed were available for testing.

No. 107, Seed clean and bright.

No. 176. Package was broken on receipt, so no purity test was made.

Beet.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
201	Eclipse-Henderson,	B.seed chaff
202	Eclipse-Barnard,	B.seed chaff
203	Early Eclipse-Elgin,	B.seed chaff
204	New Eclipse-Burpee,	B.seed chaff
205	Eclipse-Shumway,	B.seed chaff
206	Early Eclipse-Alneer,	B/seed chaff
207	Early Eclipse-Leonard,	B.seed chaff
208	Early Eclipse-Elgin,	chaff
209	Eclipse-Hammond,	B.seed chaff
210	New Early Eclipse-Buckbee,	B.seed chaff
211	Eclipse-Wernick,	B.seed chaff
212	Eclipse-Vaughan,	B.seed chaff
213	Earl/ Eclipse-Ferry(box),	B.seed chaff
214	New Eclipse-Briggs(box)/	B.seed chaff
215	Mangel Wurtzel-Graves,	B.seed chaff
216	No.92 -Great Northern,	B.seed chaff
217	New Dark Red Eclipse-Rice(box),	B.seed chaff
218	5 Splendid Varities Mixed-Isbell,	B.seed chaff
219	Eclipse-Crosman,	B.seed chaff,
220	Egyptian Extra Early Turnip-Landreth (box),	B.seed chaff

Beet.

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. P	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. V	Real Value. $\frac{P \cdot V}{100}$
201	.05	7.371	.154	.209	4	145.50	145.20
202	.05	7.560	.158	.209	4	14 6 .50	14 6 .20
203	.05	3.613	.009	.250	4	<u>155.00</u>	154.90
204	.05	9.332	.095	1.01	3	140.50	139.4
205	.03	9.952	.076	.76	4	145.00	144.4
206	.03	6.003	.032	.53	4	148.00	147.90
207	.03	17.848	.711	3.90	4	120.00	115.00
208	.05	3.735	.007	.19	6	<u>154.00</u>	153.80
209	.05	6.258	.234	3.74	4	<u>166.50</u>	161.00
210	.05	7.580	.156	2.06	4	147.00	144.00
211	.033	16.862	.724	4.31	4	147.50	143.00
212	.05	6.193	.008	.13	4	<u>149.50</u>	149.40
213	.05	11.735	.025	.213	4	<u>137.00</u>	137.00
214	.05	18.824	.768	1.42	4	107.50	106.00
215	.01 2	2.698	.005	.185	4	4 9.25	4 9.00
216	trial	9.070	.440	4.85	4	<u>149.50</u>	143.50
217	.05	13.755	.223	1.62	4	139.50	137.00
218	.02	7.917	.019	.240	4	<u>161.50</u>	161.00
219	.05	15.925	.152	.956	4	61.00	60.50
220	.05	11.235	.291	.260	4	145.00	144.50

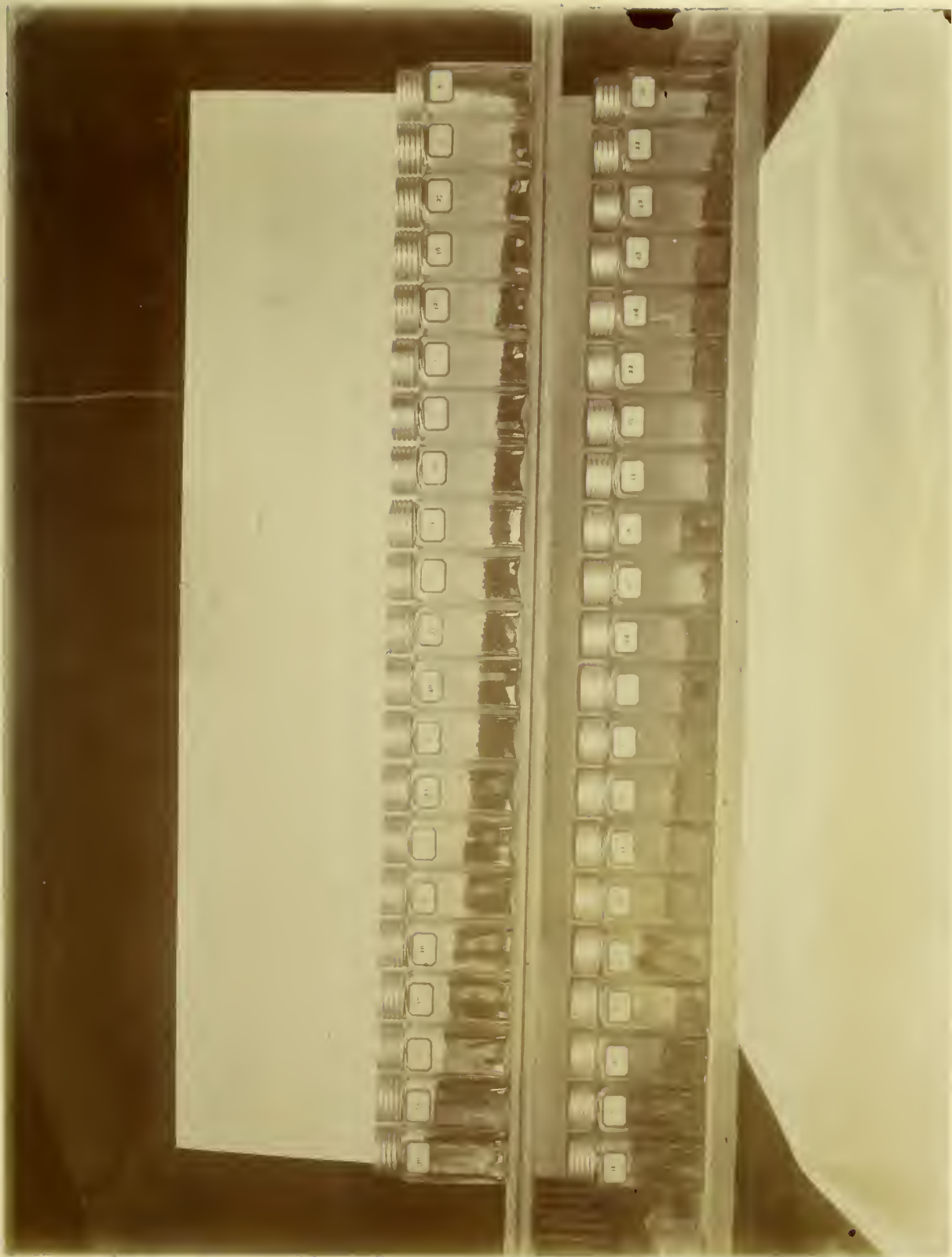
2-Beet.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
221	Extra Early Egyptian-U.S.Dept.Agric.,	B.seed chaff
222	Crosby's Egyptian-Haskin,	B.seed
223	Eclipse-May (box),	B.seed
224	Crosby's Egyptian-Hammond,	B.seed
225	Crosby's Improved Egyptian-Templin,	B.seed
226	Dewing's Improved Blood Turnip-Alneer,	B.seed
227	Best of All-Great Northern,	B/seed stone
228	Dewing's Blood Turnip-Forrest,	B/seed
229	Perfected Red Turnip-Bell	B.seed
230	Improved Mammoth-Burroughs,	B.seed
231	Edmand's Blood Turnip-Iowa,	B.seed
232	Early Blood Turnip-Missouri Valley,	B.seed stone
233	A new Beet from Holland-Burpee,	B.seed
234	Forty Day-Martz,	B/seed
235	25 Splendid Sorts-Salzer,	B.seed
236	Eclipse-May (order),	B.seed
237	Mammoth Long Red-Anderson,	B.seed
238	Splendid-Buckbee,	B.seed
239	5 Kinds-Mills,	B.seed
240	Egyptian Extra Early Turnip-Landreth(order)	B.seed

2-Beet.

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. P	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. V	Real Value. $\frac{P \cdot V}{100}$
221	trial	7.015	.0415	.592	4	142.00	144 .00
222	.01	2.960	.0952	.322	4	106.00	105 .50
223	.05	9.530	.1252	1 .31	4	<u>151.50</u>	150.00
224	.05	7.543	.158	2.09	4	139.00	135.00
225	.02	19.464	.095	.488	4	112.50	112.00
226	.02	5.035	.085	1.70	4	123.50	122.00
227	.05	6.180	.305	4.94	4	<u>186.00</u>	176.00
228	.016	8.052	.0857	1.07	4	<u>191.50</u>	190.00
229	.006	4.632	.086	1 .86	6	149.00	148.00
230	grati	24.135	.326	1.35	6	<u>180.00</u>	179.00
231	.05	8.071	.7155	8.86	6	133.50	121.50
232	.02	10.470	.350	3.33	6	148.50	143.00
233	trial	1.985	.0252	.127	6	<u>173.00</u>	173.00
234	.015	2.065	.006	.292	6	117.00	116.75
235	.02	2.010	.0157	.785	6	134.00	133.50
236	.05	6.155	.2198	3.56	6	89.50	86.30
237	.02	9.730	.2095	2.15	6	148.50	145.00
239	.02	8.933	.1150	1.62	6	114.00	113.00
238	.02	7.897	.0400	.507	6	<u>167.50</u>	166.80
240	.05	11.510	.3905	3.39	6	<u>149.50</u>	145.00







Beet.

Germination Standard 150 percent. Date of test, Aug. 11, 1903.

Purity Standard, 99 percent. Date of test, Feb. 15, 1904.

Date weighed, Mar. 17, 1903. Range of temperature

Number of seeds per test 100. Method of testing, blotting paper.

Each beet fruit, or "ball", is likely to contain from two to seven seeds. 100 balls should yield at least 150 sprouts. The seeds germinated so rapidly that great difficulty was experienced to get over each sample every day. No re-test was made because of the uncertainty of the number of seeds per ball, there being no very wide variations.

Cabbage.

Germination Standard 90-95 percent. Date of test, Aug. 27, 1903.

Purity Standard, 99 percent. Date of test, Feb. 9, 1904.

Date weighed, Mar. 28, 1903. Range of temperature 74°-90°.

Number of seeds per test 100. Method of testing, blotting paper.

These seeds do not mould badly, the worst cases being noted. The seeds remaining at the close of the test were brown on the inside instead of a bright yellow.

Samples moulded

No. 316

No. 326

No. 332

No. 335

Samples moulded

No. 337

No. 338

No. 345

No. 346

3-Beet.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
241	Early Eclipse-Ferry (order),	B.seed
242	Early Blood Turnip-Fair,	B.seed
243	Eclipse-Boston Store,	B.seed
244	Eclipse Beet-Siegel Cooper,	B.seed
245	Eclipse-Rothchild's,	chaff

3-Beet.

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
241	.05	16.825	.2690	1.60	6	132.50	132.00
242	.01	3.893	.088	2.26	<u>6</u>	144.00	142.00
243	.01	6.495	.2157	3.32	6	120.00	116.00
244	.01	6.920	.2748	3.97	6	117.00	113.50
245	.01	7.080	.0595	.841	6	145.00	144.50

Cabbage.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
301	Select True Early Jersey Wakefield-Buckbee	sand
302	Stone Mason-Forrest,	
303	Savoy 1625-Burpee,	B.seed F.seed
304	Early Flat German-Shumway,	
305	25 Elegant sorts-Salzer,	B.seed
306	Early Jersey Wakefield-Forrest,	B.seed chaff
307	10 Splendid sorts-Mills,	B.seed
308	Early Jersey Wakefield-Iowa,	B.Seed
309	Early Jersey Wakefield-Martz,	
310	A Mixture of 5 best Early Varieties-Isbell,	B.seed
311	Early Varieties Mixed-Templin,	B.seed
312	Warren Stone Mason-Haskin,	
313	Early Jersey Wakefield- Shumway,	B.seed
314	Early Winningstadt-Graves,	B.seed
315	Jersey Wakefield-Hammond,	B.seed
316	Select Premium Flat Dutch-Alneer,	B.seed
317	Late Varieties Mixed-Templin,	sand
318	Winterheader-Bell,	
319	Express-Hammond,	B.seed
320	Winningstadt-Hammond,	B.seed
321	Early Jersey Wakefield-Burroughs,	

Cabbage.

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. P	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. V	Real Value. P.V 100
301	.05	3.142	.004	.115	4	64.50	64.40
302	.05	5.157	.000	.000	4	64.50	64.50
303	gratis	1.243	.016	1.29	2	92.00	90.80
304	gratis	1.500	.000	.000	4	57.4	57.40
305	.02	4.008	.063	1.58	4	63.5	62.50
306	.05	2.895	.145	.500	2	94.00	93.50
307	.04	3.107	.0245	.790	2	76.50	75.90
308	.05	3.966	.029	.732	2	79.00	78.45
309	.05	2.565	.000	.000	2	70.50	70.50
310	.05	3.288	.03	.915	2	71.00	70.00
311	.05	5.509	.011	.02	2	78.00	78.00
312	.05	2.629	.000	.000	5	64.00	64.00
313	.04	6.013	.0152	.253	5	80.50	80.00
314	.02	3.463	.0177	.511	2	76.00	75.60
315	.05	4.616	.0402	.872	2	77.5	76.90
316	.04	3.508	.020	.591	2	63.50	63.00
317	.05	5.722	.020	.353	2	90.00	90.00
318	.005	2.319	.000	.000	2	83.50	83.50
319	.05	4.218	.051	1.22	4	51.00	50.40
320	.05	4.196	.015	.358	2	87.00	87.00
321	.06	4.889	.000	.000	2	64.00	64.00



2-Cabbage.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
322	Early Jersey Wakefield-Vaughan,	
323	Selected Early Jersey Wakefield-Henderson,	
324	True Early Jersey Wakefield-Alneer,	
325	Early Jersey Wakefield-Burpee,	
326	Early Jersey Wakefield-Great Northern,	
327	Early Jersey Wakefield-Barnard,	B.seed
328	Jersey Wakefield-Leonard,	B.seed
329	Jersey Wakefield-Elgin,	
330	Late Flat Dutch-Missouri Valley,	
331	Hollander-Anderson,	
332	Earley Jersey Wakefield-Missouri Valley,	B.seed
333	Early Jersey Wakefield-Ferry(box)	
334	Select Very Early Jersey Wakefield- Landreth (box)	B.seed
335	True Early Jersey Wakefield-Briggs,	
336	Henderson's Early Summer-May (box),	
337	Early Wakefield-Crosman,	B.seed
338	Henderson's Early Summer-Rice,	B.seed
339	Henderson's Early Summer-May (order),	B.seed
340	Cabbage-Bunkerhill,	

2-Cabbage.

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. P	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. V	Real Value. $\frac{P \cdot V}{100}$
322	.05	5.184	.000	.000	2	<u>93.50</u>	93.50
323	.05	3.531	.000	.000	2	<u>83.50</u>	83.50
324	.04	4.335	.000	.000	2	83.00	83.00
325	.05	3.984	.000	.000	2	<u>89.50</u>	89.50
326	.04	3.314	.000	.000	5	37.50	37.50
327	.05	6.503	.020	.308	2	82.50	82.50
328	.05	5.448	.031	.569	2	89.00	89.00
329	.05	5.589	.000	.000	2	84.00	84.00
330	.02	3.326	.000	.000	5	33.25	33.25
331	.04	4.491	.000	.000	2	<u>96.00</u>	<u>96.00</u>
332	.02	3.860	.0411	1.06	5	47.00	46.50
333	.05	4.481	.000	.000	2	89.00	89.00
334	.05	3.584	.0245	.684	2	85.00	85.00
335	.05	6.548	.000	.000	5	21.00	21.00
336	.05	4.800	.000	.000	2	<u>94.00</u>	94.00
337	.05	5 5.557	.042	.756	9	3.00	2.50
338	.05	5.555	.0218	.392	2	44.00	44.00
339	.05	3.754	.022	.587	2	84.50	84.00
340	.01	.359	.000	.000	2	85.00	85.00

01.74	4	000.	000.	101.3	02.	000
02.13	2	000.	000.	104.5	00.	000
02.25	1	000.	000.	107.7	00.	000
02.34	2	000.	000.	109.8	00.	000
02.47	1	000.	000.	111.9	00.	000
02.50	4	000.	000.	113.0	00.	000
02.59	4	000.	100.	114.1	00.	000
03.10	2	000.	000.	115.2	00.	000
03.18	2	000.	000.	116.3	00.	000
03.26	2	000.	000.	117.4	00.	000
03.34	2	000.	000.	118.5	00.	000
03.42	1	000.	1100.	119.6	00.	000
03.50	2	000.	000.	120.7	00.	000
03.58	3	400.	0000.	121.8	00.	000
04.06	4	000.	000.	122.9	00.	000
04.14	8	000.	000.	124.0	00.	000
04.22	4	000.	000.	125.1	00.	000
04.30	8	000.	000.	126.2	00.	000
04.38	8	000.	0000.	127.3	00.	000
04.46	8	000.	000.	128.4	00.	000
04.54	8	000.	000.	129.5	00.	000
05.02	8	000.	000.	130.6	00.	000



3-Cabbage.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
341	Early Jersey Wakefield-Ferry(order),	B.seed
342	Select Very Early Jersey Wakefield- Landreth (order),	
343	Henderson's Early Summer-Rothchild's,	B.seed F.seed
344	Early Jersey Wakefield-Fair,	
345	Early Jersey Wakefield-Boston Store,	B.seed F.seed
346	Early Jersey Wakefield-Siegel Cooper,	F.seed

3-Cabbage.

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. P	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. V	Real Value. P.V 100
341	.05	5.639	.022	.392	2	<u>97.00</u>	97.00
342	.05	4.096	.000	.000	2	87.00	87.00
343	.01	4.566	.0175	.384	2	67.50	67.00
344	.01	2.272	.000	.000	2	76.00	76.00
345	.01	1.543	.004	.26	2	52.50	52.00
346	.01	2.045	.0152	.742	2	58.00	58.00

Carrot

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
401	Ox-Heart-Ferry (box)	chaff dirt
402	Orange Danver's Half Long-Landreth(box)	chaff
403	Ox-Heart-Briggs	chaff
404	New Ox-Heart Orange-Rice	chaff dirt
405	Ox-Heart-Crosman	chaff
406	Ox-Heart-Burpee	chaff
407	Ox-Heart-Henderson	chaff
408	Ox-Heart-Vaughan	chaff dirt
409	Ox-Heart-Shumway	chaff
410	Ox-Heart-Anneer	chaff dirt
411	Ox-Heart- Leonard	chaff dirt
412	Ox-Heart-Great Northern	chaff
413	Ox)Heart-Elgin	chaff F.seed
414	Ox-Heart-Elgin	chaff dirt
415	Ox-Heart-Elgin	chaff dirt F.seed
416	Ox-Heart-Buckbee	chaff
417	Ox-Heart-Barnard	chaff stones
418	Long Orange-Hammond	chaff dirt
419	Danver's Half Long-Haskin	chaff dirt
420	Long Orange-Iowa	chaff F.seed V.dirty
421	Fifteen Magnificent-Salzer	chaff

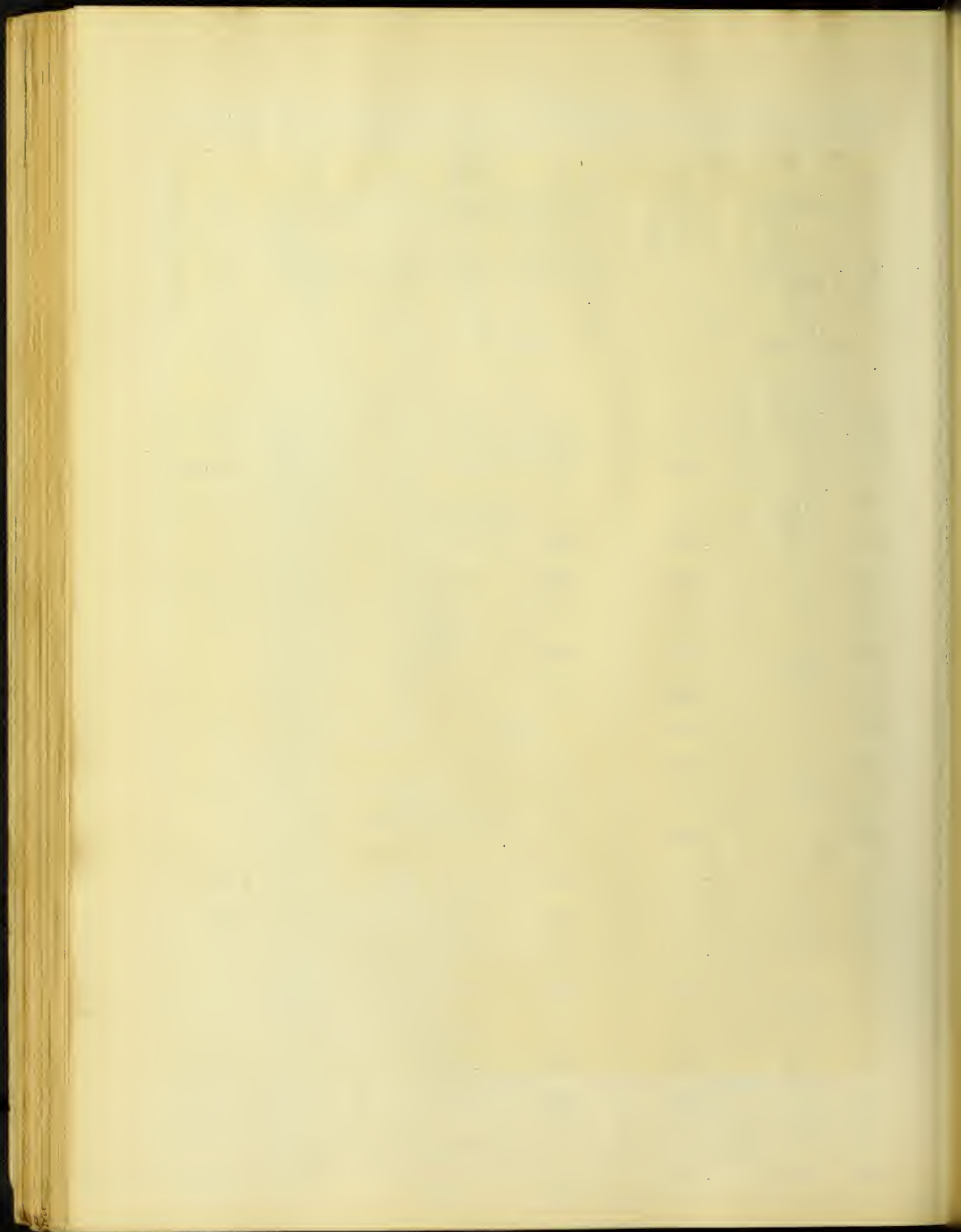
Carrot.

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. P	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. V	Real Value. $\frac{P \cdot V}{100}$
401	.05	7.472	.39	5.23	6	47.47	44.80
402	.05	7.704	.06	7.76	6	50.00	46.12
403	.05	7.468	.16	2.22	6	47.25	44.50
404	.05	5.300	.420	7.93	4	49.75	45.11
405	.05	6.500	.010	.150	6	13.00	12.50
406	.05	8.840	.010	.110	6	<u>92.75</u>	92.50
407	.05	6.927	.005	.070	6	<u>86.25</u>	86.00
408	.05	6.045	.005	.06	4	<u>82.50</u>	82.25
409	.04	2.182	Trace.		6	46.00	46.00
410	.03	5.500	.006	1.09	4	57.25	56.53
411	.05	7.924	.110	1.39	4	72.25	70.99
412	.04	7.330	.095	1.23	4	56.50	55.31
413	.05	1.755	.065	3.70	7	53.00	51.00
414	.05	2.182	.065	2.98	6	58.25	56.27
415	.05	1.131	.060	5.37	4	29.00	27.45
416	.05	7.277	.080	1.10	4	60.50	59.25
417	.05	11.270	.175	1.55	4	72.75	71.86
418	.05	6.137	.205	3.34	6	34.25	32.86
419	.01	2.350	.165	7.02	6	55.25	51.14
420	.05	13.348	1.815	13.60	6	61.00	52.70
421	.02	1.728			6	54.25	

.005

.239

53.85



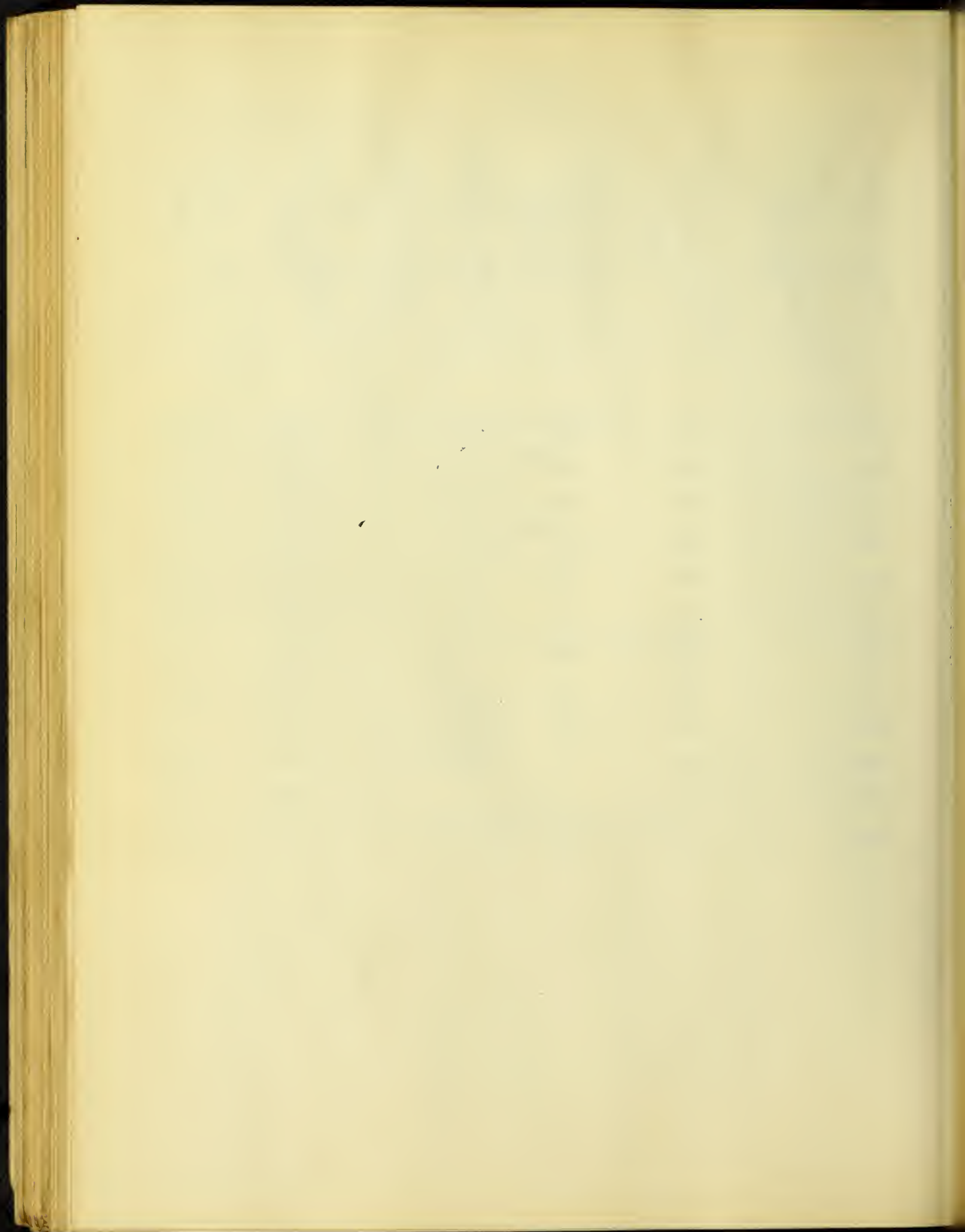


2- Carrot

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
422	Danvers Half Long-Missouri Valley	chaff F.seed
423	Danvers Half Long-May (box)	chaff
424	Danvers Orange-Templin	chaff F.seed
425	Half Long Red Nantes-Alneer	chaff F.seed
426	Danvers Half Long-May (order)	chaff stone
427	Ox-Heart-Ferry (order)	chaff stone
428	Orange Danvers Half Long-Landreth (order)	chaff F.seed dirt
429	Carrot-Bunker Hill	chaff
430	Danvers Half Long-Siegel Cooper	chaff F.seed dirt
431	Danvers Half Long-Fair	chaff F.seed dirt
432	Carrot-Boston	chaff F.seed dirt
433	Early Scarlet Short Horn-Rothschild's	chaff F.seed dirt

2- Carrot

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. P	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. V	Real Value. P·V 100
422	.02	2.120	.050	2.47	6	23.50	22.43
423	.05	5.044	.060	1.19	6	<u>83.00</u>	82.00
424	.02	5.289	.025	.447	6	<u>87.25</u>	86.50
425	.02	4.060	1.80	44.30	6	24.25	13.36
426	.05	4.378	.325	7.42	6	<u>82.25</u>	75.92
427	.05	8.455	.090	1.65	6	54.50	53.92
428	.05	8.220	.350	4.27	6	<u>81.00</u>	77.59
429	.01	.095	.005	5.27	6	17.50	12.00
430	.01	3.007	.220	7.33	6	58.75	54.69
431	.01	2.438	.115	4.78	6	42.00	40.00
432	.01	3.800	.345	22.20	6	41.50	32.68
433	.01	3.690	.200	5.44	4	39.75	37.82



Carrot.

Germination Standard 80-85 percent. Date of test, Aug. 26, 1903.

Purity Standard 90 percent. Date of test, June, 1904.

Date weighed, July 3, 1903. Range of temperature 74°-85°.

Number of seeds per test 200. Method of testing, blotting paper.

Duration of test, 14 days.

The temperature was nearly constant during the day, using 32 C. P. lamps. The seeds did not mould badly at any time except in a few cases. Some of the last sprouts were brown in color and appeared dead. No determination of hard seed was made, but a few were noticed to be bright and hard at the close of the test. The purity test was made on short notice and all impurities were not removed, so the results are below what the appearance of the samples would indicate.

Cauliflower.

Germination Standard 80-85 percent. Date of test, Mar. 31, 1903.

Purity Standard 99 percent. Date of test, June 1, 1903.

Date weighed, Mar. 23, 1903. Range of temperature 68-90°.

Number of seeds per test 100. Method of testing, blotting paper.

Duration of test, 14 days. Re-test in sand, May 11, 1903.

Packet 504 contained only 75 seed; packet 505, 100 seeds. The following samples were received in double packets: 506, 507, 509, 516, and 520. In the sand test the largest count was made on the seventh day. On the fourteenth day the number decreased largely due to damping off of the seedlings.

Cauliflower.

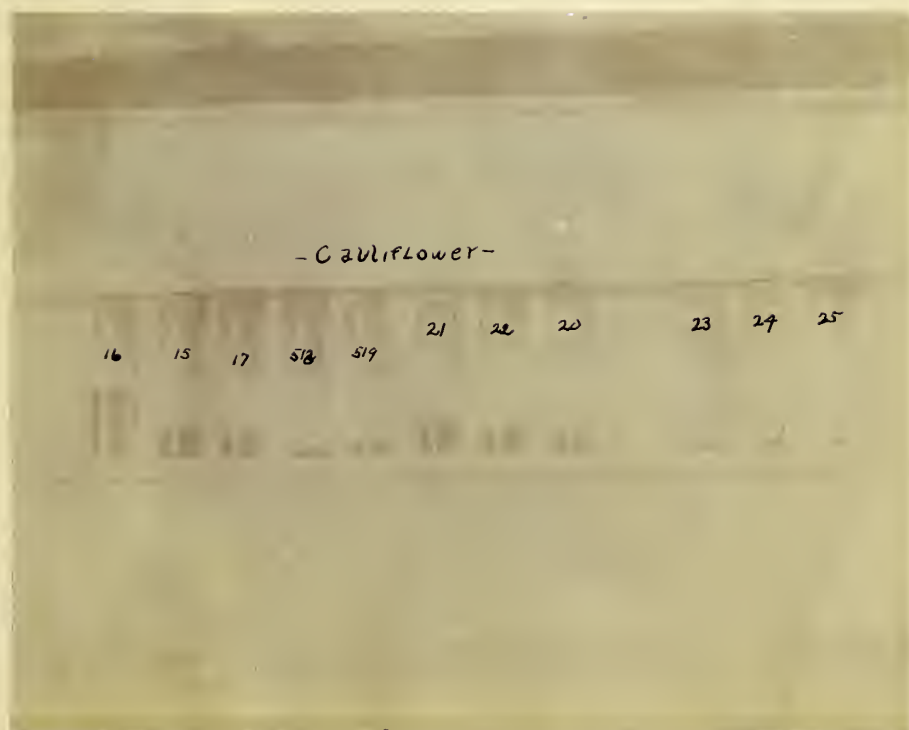
Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
501	Early Snowball-Leonard	dirt
502	Early Snowball-Great Northern	
503	Henderson's True Early Snowball-Buckbee	dirt
504	Erfurt Early Dwarf-Elgin	
505	Snowball-Elgin	
506	New Snowball-Vaughan	
507	Early Snowball-Henderson	B.seed
508	Early Snowball-Barnard	B.seed
509	Early Snowball-Burpee	B.seed
510	Early Favorite-Templin	
511	Early Paris-Hammond	B.seed
512	Snowball-May(1902)	B.seed
513	Snowball-Shumway	chaff
514	Henderson's Early Snowball-Alneer	
515	Snowball-Crosman	B.seed
516	Henderson's Snowball-Briggs	B.seed
517	Early Snowball-Febry(box)	
518	Snowball-May(box)	
519	Henderson's Early Snowball-Rice(box)	
520	Extra Early Snowball-May(order)	dirt

Cauliflower.

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. P	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. V	Real Value. P·V 100
501	.15	1.452	.017	1.17	4	70.00	69.60
502	.08	1.210	.000	.000	2	<u>83.00</u>	83.00
503	.10	1.560	.005	.321	2	<u>94.00</u>	94.00
504	.10	.185	.000	.000	soil	73.00	73.00
505	.20	.337	.000	.000	soil	<u>80.00</u>	80.00
506	.25	1.567	.000	.000	2	<u>86.50</u>	86.50
507	.25	1.304	.024	1.85	2	79.00	77.50
508	.10	.967	.007	.724	2	72.00	71.50
509	.25	1.622	.005	.308	2	<u>83.50</u>	83.50
510	.02	.798	.000	.000	2	78.00	78.00
511	.05	2.003	.019	.95	2	75.00	74.30
512	.05	.631	.004	.634	8	29.00	28.50
513	.10	1.729	.006	.342	2	<u>83.00</u>	83.00
514	.10	.990	.000	.000	2	<u>87.30</u>	87.30
515	.05	1.687	.010	.16	3	13.50	13.00
516	.05	3.645	.005	.137	0	00 00	.00.00
517	.05	1.331	.000	.000	3	60.00	60.00
518	.05	.563	.000	.000	3	<u>84.00</u>	84.00
519	.05	.763	.000	.000	3	45.00	45.00
520	.20	.968	.004	.413	3	69.00	68.50

00.27	4	71.1	7.10.	000.1	01.	130
00.28	3	000.	000.	015.1	00.	00
00.29	2	127.	000.	000.1	01.	10
00.30	1204	000.	000.	001.	03.	40
00.31	1104	000.	000.	000.	00.	0
00.32	1	000.	000.	000.1	00.	000
00.33	2	000.1	000.	000.1	00.	100
00.34	3	001.	000.	000.	01.	00
00.35	2	000.	000.	000.1	00.	00
00.36	3	000.	000.	000.	00.	01
00.37	3	00.	010.	000.1	00.	100
00.38	3	000.	000.	000.	00.	100
00.39	3	000.	000.	000.1	01.	00
00.40	3	000.	000.	000.	01.	01
00.41	3	000.	000.	000.	01.	01
00.42	3	000.	000.	000.	01.	01
00.43	3	000.	000.	000.	01.	01
00.44	3	000.	000.	000.	01.	01
00.45	3	000.	000.	000.	01.	01
00.46	3	000.	000.	000.	01.	01
00.47	3	000.	000.	000.	01.	01
00.48	3	000.	000.	000.	01.	01
00.49	3	000.	000.	000.	01.	01
00.50	3	000.	000.	000.	01.	01
00.51	3	000.	000.	000.	01.	01
00.52	3	000.	000.	000.	01.	01
00.53	3	000.	000.	000.	01.	01
00.54	3	000.	000.	000.	01.	01
00.55	3	000.	000.	000.	01.	01
00.56	3	000.	000.	000.	01.	01
00.57	3	000.	000.	000.	01.	01
00.58	3	000.	000.	000.	01.	01
00.59	3	000.	000.	000.	01.	01
00.60	3	000.	000.	000.	01.	01

Cauliflower .



2-Cauliflower.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
521	Early Snowball-Landreth(order)	B.seed
522	Early Snowball-Ferry(order)	B.seed
523	Early Erfurt-Boston Store	B.seed
524	Early Snowball-Siegel Cooper	
525	Early Snowball-Rothchild's	sand

2-Cauliflower.

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
521	.25	1.555	.010	.155	3	<u>95.00</u>	95.00
522	.25	1.342	.009	.672	3	<u>81.00</u>	80.50
523	.01	.465	.004	.860	4	50.00	49.60
524	.01	.486	.000	.000	3	58.00	58.00
525	.01	.528	.022	4.26	3	40.00	38.30

Celery.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
601	White Plume-Landreth,	B. seed dirt
602	Giant Pascal-Iowa,	chaff
603	White Plume Self Blanching-Buckbee,	chaff, F. seed
604	Five Choice Kinds-Mills,	chaff F. seed
605	White Plume-May,	dirt F. seed
606	White Plume-Great Northern,	chaff F. seed
607	Winter Giant-Bell,	dirt
608	White Plume- Hammond,	chaff
609	White Plume-Elgin,	chaff F. seed
610	White Plume-Ferry(box)	chaff
611	New Giant Pascal-Templin,	chaff
612	White Plume- Shumway,	chaff
613	Golden Self Blanching-Missouri Valley,	stems
614	Giant Pascal-Rice,	dirt
615W	White Plume Self Blanching-Vaughan,	chaff
616	White Plume-Elgin,	chaff F. seed
617	White Plume-Burpee	chaff
618	White Plume-Burroughs,	chaff
619	Giant Pascal-Burroughs	sand F. seed
620	White Plume-Leonard,	dirt
621	White Plume-Barnard,	dirt

Celery.

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. P	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. V	Real Value. P.V 100
601	.05	2.922	.008	.274	14	<u>64.25</u>	64.00
602	.05	2.855	.017	.751	11	<u>64.00</u>	63.50
603	.04	4.183	.019	.454	14	<u>61.75</u>	61.75
604	.02	1.096	.015	1.38	14	<u>65.25</u>	64.30
605	.05	2.069	.038	1.83	0	00.00	00.00
606	.04	4.715	.034	1.909	11	<u>78.00</u>	77.50
607	.006	.350	.004	1.15	11	57.25	56.30
608	.05	3.659	.036	.986	11	23.25	23.00
609	.05	1.312	.013	.990	11	58.50	58.00
610	.05	.703	.005	.711	21	<u>66.50</u>	66.00
611	.05	4.054	.080	1.97	11	33.00	32.30
612	.04	4.724	.093	1.97	11	43.00	42.20
613	.02	4.037	.011	.273	11	<u>68.00</u>	68.00
614	.05	2.190	.018	.822	11	<u>79.00</u>	78.50
615	.05	4.462	.023	.516	11	<u>92.50</u>	92.00
616	.05	1.254	.010	.125	14	57.75	57.50
617	.05	2.961	.020	.675	11	<u>82.75</u>	82.50
618	.06	6.115	.021	.344	21	<u>88.75</u>	88.50
619	.06	5.722	.085	1.496	14	54.50	53.70
620	.05	3.357	.027	.806	11	<u>85.75</u>	85.00
621	.05	6.254	.034	.544	11	54.25	53.90

2-Celery.

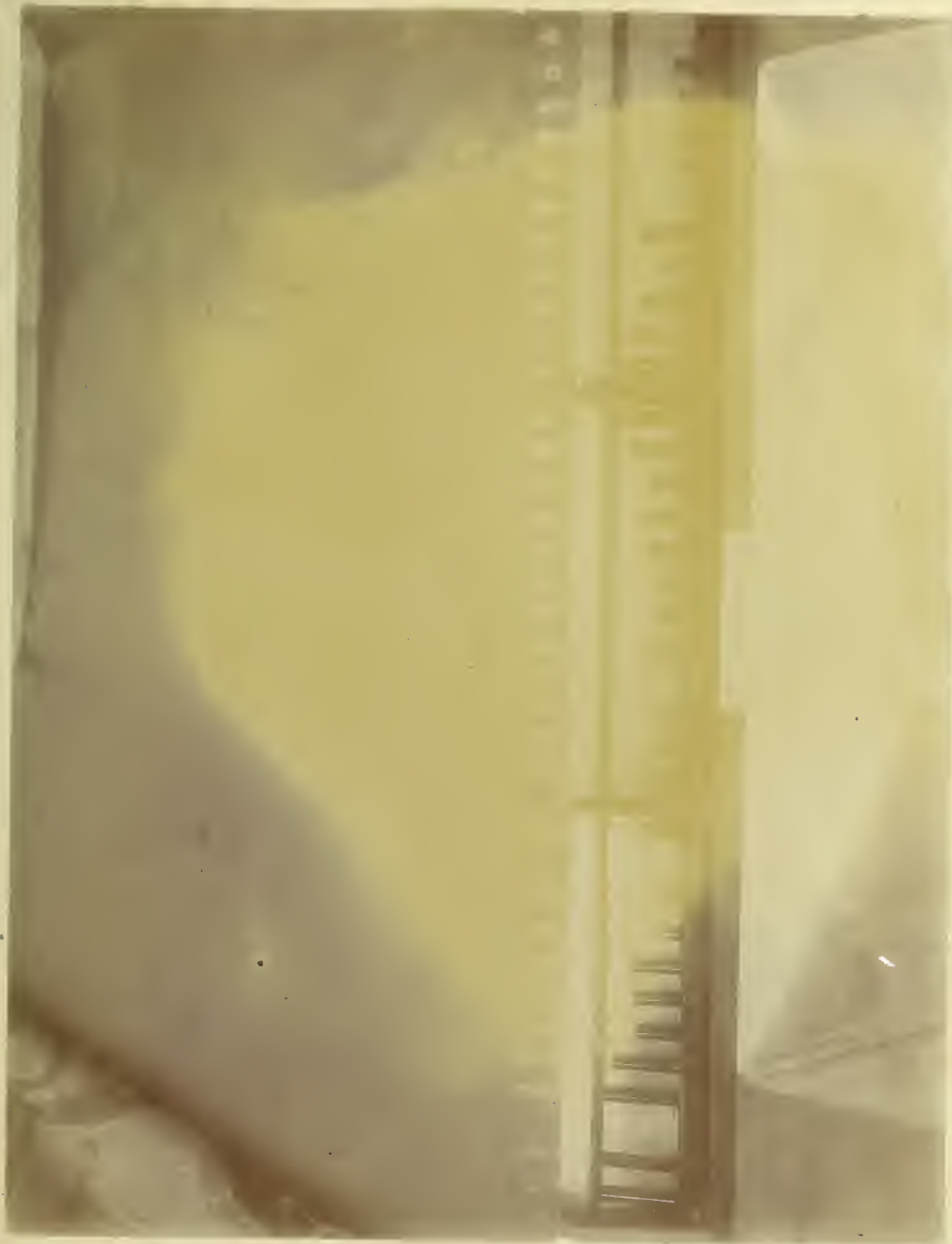
Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
622	Henderson's White Plume-Alneer,	chaff F.seed
623	White Plume-May(box)	F.seed
624	WhitePlume-Crosman, (box)	F.seed
625	White Plume-Briggs, (box)	dirt F.seed
626	Perfected White Plume-Henderson,	dirt
627	White Plume- May, (order)	dirt F.seed
628	White Plume-Landreth,(order)	chaff
629	White Plume-Ferry,(order)	chaff F/seed
630	Golden Self Blanching-Fair,	F.seed
631	Boston Market-Boston Store,	chaff
632	White Plume-Siegel Cooper,	
633	White Plume-Rothschild's	chaff

2-Celery.

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. P	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. V	Real Value. P.V 100
622	.04	2.320	.005	.216	11	<u>72.25</u>	72.00
623	.05	2.540	.000	.000	11	<u>76.25</u>	76.25
624	.05	2.778	.014	.504	14	23.50	23.40
625	.05	3.280	.011	.335	11	45.00	45.00
626	.05	3.592	.031	.864	10	<u>92.75</u>	92.00
627	.05	2.225	.020	.901	10	<u>70/25</u>	69.50
628	.05	3.095	.006	.194	10	<u>84.75</u>	84.75
629	.05	2.122	.018	.849	12	<u>65.50</u>	65.00
630	.01	1.678	trace	---	10	<u>69.75</u>	69.75
631	.01	1.721	.005	.291	12	<u>82.75</u>	82.50
632	.01	1.734	trace	---	9	<u>64.75</u>	64.75
633	.01	1.809	.005	.276	9	<u>81.75</u>	81.50

75.25	11	325.	300.	038.2	25.	225
75.25	11	330.	300.	039.2	25.	225
75.25	21	430.	410.	071.2	30.	340
75.25	11	535.	510.	082.2	30.	330
75.25	01	235.	210.	021.2	20.	210
75.25	01	135.	100.	011.1	20.	120
75.25	01	341.	320.	040.2	20.	220
75.25	01	445.	410.	051.1	20.	320
75.25	01	—	—	011.1	10.	100
75.25	11	135.	100.	021.1	10.	120
75.25	0	—	—	001.1	10.	100
75.25	0	235.	200.	038.1	10.	220

2



x



Celery.

Germination Standard 60-65. Date of test , Nov. 30, 1903.

Purity Standard 98 percent. Date of test, Feb. 17, 1904.

Date weighed, Apr. 2, 1903. Range of temperature, 55°-90°.

Number of seeds per test, 200. Method of testing, blotting paper.

Duration of test 21 days.

Packets Nos. 618 and 619 were broken when received and part of the contents lost.

Corn, Sweet.

Germination Standard 85-90. Date of test, Jan. 9, 1904.

Purity Standard 99 percent. Date of test, Apr. 23, 1903.

Date weighed, Apr. 23, 1903. Range of temperature, 65°-100°.

Number of seeds per test, 100. Method of testing, blotting paper.

Re-test, Apr. 25, 1904. Duration of test 10-14 days.

All plates of seeds were badly moulded on the seventh day of test and in very bad shape on the tenth. Water was supplied to the blotters as required and only a few dried out. Insects got in most of the seeds by January, 1904. One half pint of seed was ordered from several firms. One half pint of seed should weigh 113.40 grams. Note that several of the weights in quarter of pounds fall below this.

Corn-Sweet.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
701	Stowell's Evergreen)Alneer,	B.seed chaff
702	Early Evergreen-Vaughan,	B.seed
703	Stowell's Evergreen-Henderson,	B.seed
704	Stowell's Evergreen-Burpee,	
705	Stowell's Evergreen-Burpee,	B.seed
706	Stowell's Evergreen-Shumway,	B.seed
707	Stowell's Evergreen-Burroughs,	B.seed
708	Stowell's Evergreen-Barnard,	B.seed
709	Stowell's Evergreen-Leonard,	B.seed
710	Stowell's Evergreen-Buckbee,	B.seed
711	S.Evergreen-Elgin,	B.seed
712	Stowell's Evergreen-Great Northern,	B.seed
713	Stowell's Evergreen-Hammond,	B.seed
714	First of All-Hammond,	B/seed
715	First of All-Templin,	B.seed
716	Early Minnesota-Missouri Valley,	
717	Cory-May (1902),	B.seed
718	Stowell's Evergreen-Rice,	B.seed
719	Ruby King Pop-Graves,	
720	Stowell's Evergreen-May (box),	
721	Stowell's Evergreen-Briggs,	B.seed dirt

Corn.

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. P	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. V	Real Value. $\frac{P \cdot V}{100}$
701	.08	109.7	2.9	2.66	4	80.00	77.80
702	.10	66.5	.088	.132	4	<u>88.00</u>	\$8.00
703	.10	108.5	.915	.839	4	71.00	70.50
704	.10	55.8	.689	.124	4	56.60	56.60
705	.10	55.6					
706	.08	108.9	2.725	2.49	4	67.00	65.30
707	.06	46.00	.387	8.41	4	41.00	37.60
708	.10	147.5	1.078	.735	4	72.00	71.50
709	.12	207.1	.945	.456	4	78.50	78.25
710	.10	122.1	1.372	1.12	4	74.00	73.20
711	.10	193.0	2.495	1.29	4	59.50	59.00
712	.12	219.0	2.622	1.19	4	59.00	58.00
713	.05	43.0	.405	9.42	4	30.00	27.20
714	.05	46.4	.357	7.70	4	47.50	43.80
715	.02	42.0	.192	.457	6	56.00	55.50
716	.02	56.8	.000	.00	4	74.50	74.50
717	.05	28.50	.085	.298	6	73.00	73.00
718	.05	37.5	.500	1.33	4	77.00	76.00
719	.0125	37.8	.000	.00	4	<u>97.75</u>	97.75
720	.05	26.5	.000	.00	4	43.50	43.50
721	.10	123.2	1.480	1.23	4	49.50	49.00

2-Corn-Sweet.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
722	Stowell's Evergreen-Crosman,	B.seed
723	Stowell's Evergreen-Ferry (box),	B.seed
724	Stowell's Evergreen-May (order),	B.seed
725	Stowell's Evergreen-May (order),	
726	Stowell's Evergreen-Ferry (order),	B.seed
727	Cory-Fair,	
728	Stowell's Evergreen-Siegel Cooper,	B.seed
729	Cory-Fair,	B.seed
730	Stowell's Evergreen-Siegel Cooper,	
731	Stowell's Evergreen-Boston Store,	
732	Stowell's Evergreen-Rothchild's,	
733	Stowell's Evergreen-Rothchild's,	B.seed
734	Stowell's Evergreen-Boston Store,	B.seed

2-Corn-Sweet.

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. P	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. V	Real Value. $\frac{P \cdot V}{100}$
722	.10	148.0	1.380	.932	4	24.50	24.00
723	.10	136.3	.485	.357	4	79.00	79.00
724	.05	23.4	.170	.727	4	55.00	55.00
725	.05	26.4	.000	.000	6	52.00	52.00
726	.10	59.5	1.600	2.69	4	69.00	67.10
727	.01	27.7	.000	.000	4	83.00	83.00
728	.01	21.2	.285	1.35	4	62.00	61.10
729	.01	29.00	.255	.879	4	<u>89.00</u>	88.80
730	.01	18.5	.000	.000	4	74.00	74.00
73L	.01	26.7	.000	.000	4	60.00	60.00
732	.01	29.0	.000	.000	4	65.00	65.00
733	.01	18.8	.055	.293	4	57.00	57.00
734	.01	27.8	.092	.331	4	60.00	60.00

Cucumber.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
801	Improved White Spine-Vaughan	
802	White Spine-Shumway	chaff
803	Monarch White Spine-Great Northern	
804	Monarch White Spine-Buckbee	
805	Evergreen White Spine-Barnard	
806	Improved White Spine-Elgin	
807	Improved White Spine-Elgin	chaff
808	Improved Early White Spine-Alneer 809	
809	Extra Early White Spine-Burpee	stone F.seed
810	Evergreen White Spine-Leonard	
811	Im'p Early White Spine-Henderson	
812	Arlington White Spine-U.S.Dept.Agric.	chaff
813	Early Frame-Martz	chaff F.seed
814	Long Green-Missouri Valley	B.seed
815	Hammond's White Spine-Hammond	B.seed 3 stones
816	Im'p Chicago Pickle-Iowa	chaff
817	Jersey Pickle-Templin	dirt
818	Imp.Long Green-Haskin	
819	Early Russian-Hammond	
820	Family Favorite-Bell	B.seed F.seed

Cucumber

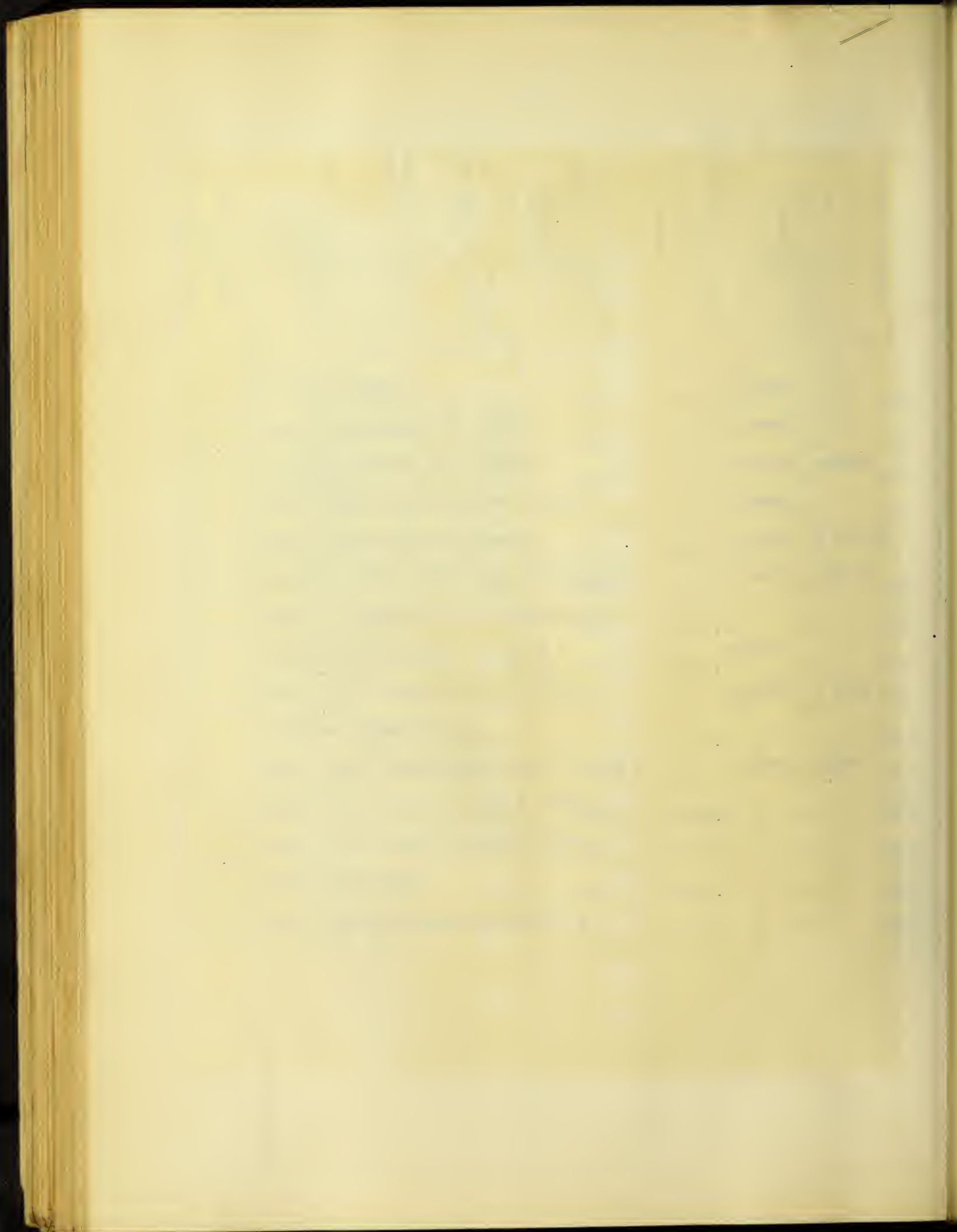
Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. P	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. V	Real Value. $\frac{P \cdot V}{100}$
801	.05	4.298	.008	.186	2	<u>94.65</u>	94.41
802	.04	7.085	0000	000	2	<u>95.00</u>	95 00
803	.05	7.504	000	000	2	<u>99.50</u>	99.50
804	.05	8.113	000	000	4	54.50	54.50
805	.05	7.792	000	000	2	<u>87.00</u>	87.00
806	.10	4.798	000	000	2	<u>84.50</u>	84.50
807	.10	4.456	.015	.337	2	77.50	77.00
808	.05	5.462	000	000	2	<u>97.50</u>	97.50
809	.05	4.619	.026	.562	2	77.50	77.00
810	.05	3.357	000	000	2	47.00	47.00
811	.05	7.918	000	000	2	78.00	78.00
812	Trial	4.163	.009	.216	2	76.00	76.00
813	.015	2.145	.0105	.489	2	63.00	63.00
814	.02	4.209	.0075	.178	2	23.00	23.00
815	.05	5.023	.0878	.174	2	Lost	Lost
816	.05	6.061	.0011	.018	2	72.50	72.50
817	.02	4.666	.0074	.015	2	83.25	83.25
818	.01	2.135	000	000	2	69.00	69.00
819	205	8.359	000	000	2	<u>98.00</u>	98.00
820	.006	3.642	.050	.137	2	75.00	75.00

2-Cucumber.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
821	No.182-Buckbee	B.seed
822	Long Green-Landreth (box)	B.seed
823	Green Prolific- May (box)	B.seed stone
824	Early White Spine-Ferry (box)	B.seed .
825	Early White Spine-Crosman	B.Seed F.seed
826	Improved Early White Spine-Briggs	B.seed chaff
827	Early Arlington White Spine-Rice	
828	Green Prolific-May (order)	wheat
829	Early White Spine-Ferry (order)	B.seed stone
830	Cucumber-Bunker Hill	
831	Long Green Turkey-Landreth (order)	B.seed dirt
832	Early White Spine-Siegel Cooper-	
833	Early White Spine-Boston Store	
834	Long Green-Fair	
835	Early White Spine-Rothchild's	

2- Cucumber

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. P	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. V	Real Value. P.V 100
821	Trial	3.407	.034	.10	4	2.00	2.00
822	.05	4.132	.0425	1.02	2	68.00	67.00
823	.05	5.692	.143	2.51	0	00000	00 00
824	.05	7.859	.023	.293	2	61.50	61.00
825	.05	7.039	.052	.739	2	58.50	58.00
826	.05	8.596	.059	.686	2	84.50	84.00
827	.10	15.868	000	000	2	51.50	51.50
828	.05	5.908	.077	1.31	2	<u>100.00</u>	98.79
829	.05	10.409	.188	1.81	2	<u>97.50</u>	96.00
830	.01	1.56	000	000	No Test		
831	.05	4.048	.025	.617	2	30.00	29.50
832	.05	3.341	.000	.000	4	33.00	33.00
833	.01	3.156	000	000	6	33.00	33.00
834	.01	3.363	000	000	6	33.00	33.00
835	.01	3.363	000	000	6	63.00	63.00







Cucumber.

Germination Standard 85-90 percent. Date of test, Aug. 27, 1903.

Purity Standard 99 percent. Date of test, Feb. 9, 1904.

Date weighed, June 5-12, 1903. Range of temperature 74°-90°.

Number of seeds per test 100. Method of testing, blotting paper.

Duration of test, 14 days.

Small portions of the skin were found sticking to the seed, and could only be removed with difficulty.

Egg Plant.

Germination Standard 75-80. Date of test, Sept. 23, 1903.

Purity Standard 99 percent. Date of test, Feb. 18, 1904.

Date weighed, Apr. 3, 1903. Range of temperature 60°-98° F.

Number of seeds per test 100. Method of testing, blotting paper.

Duration of test, 14 days. Re-test, December 21, 1903.

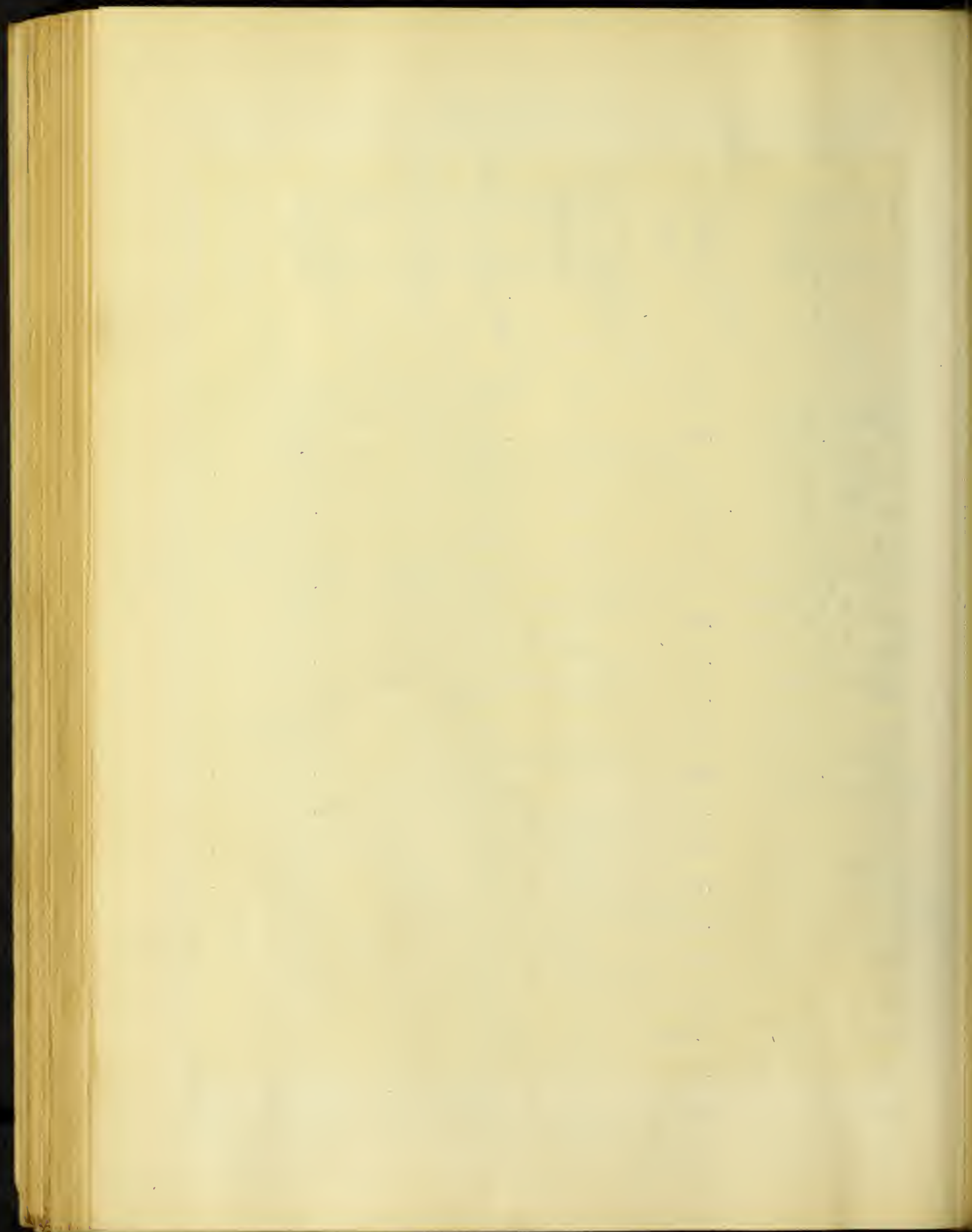
These seeds moulded badly, but the duplicates 911-915 were very free from mould.

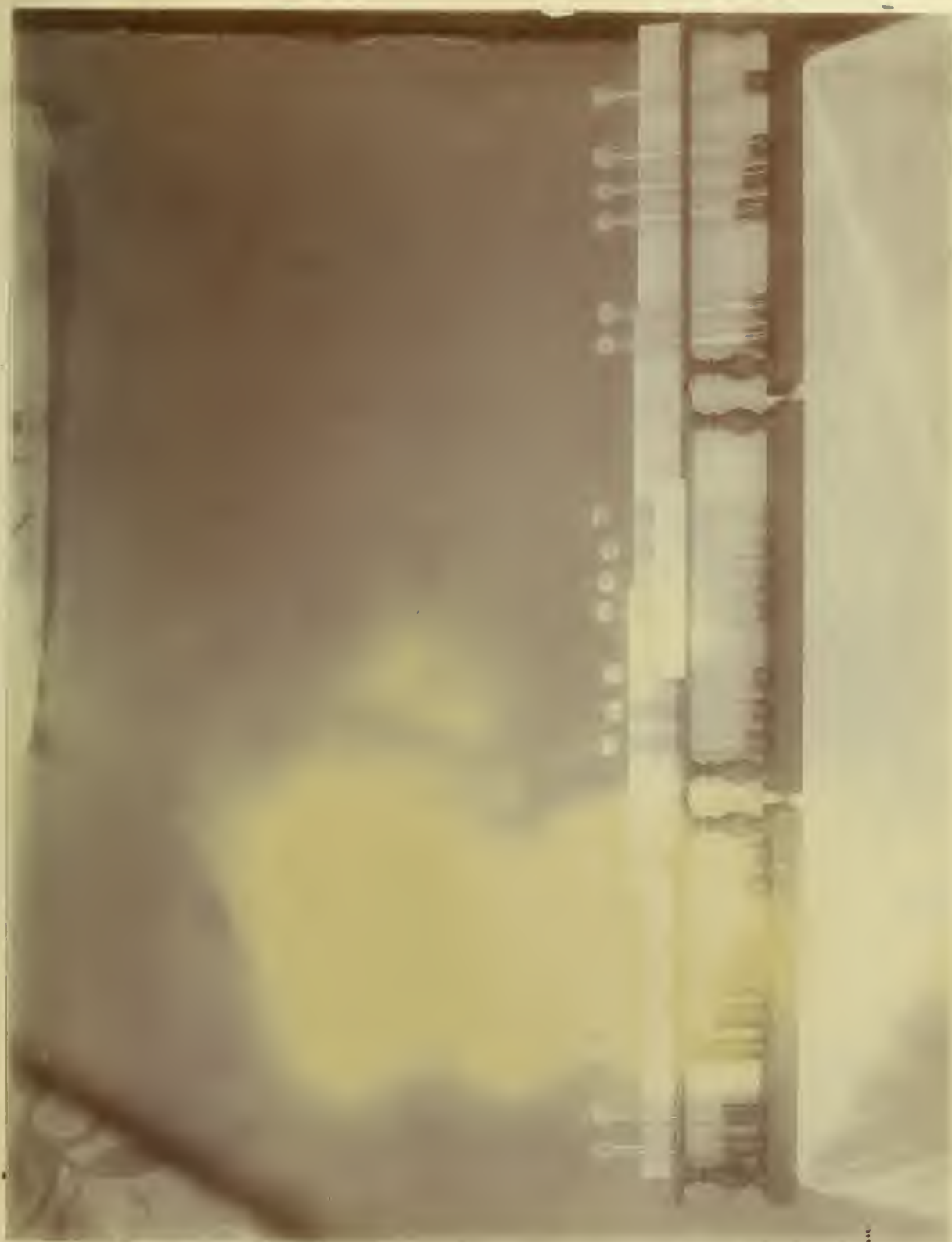
Egg-Plant

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
901	New York Purple-Leonard	
902	Large Purple-Hammond	B.seeds & dirt
903	Three Choice Varieties Mixed-Templin	B.seeds & stone
904	Imp. New York Large Purple-Vaughan	B.seeds
905	New York Purple-Shanley	B.seeds & sand
906	Imp. New Large Purple-Great Northern	Wood & F.seeds
907	Three Choice Varieties Mixed-Templin	Stones & dirt
908	New York Imp. Egg-Plant-Elgin	Stones & B. seed
909	New York Imp. Large Purple-Burpee	B.seeds & sand
910	New York Imp.-Alneer	B.seeds
911	New York Imp. Spineless-Henderson	B.seeds & sand
912	New York Purple-Barnard	B.seeds & F.seeds
913	Improved Large Purple-Ferry (box)	Dirt
914	Improved New York Purple-Crosman	B.seeds & stones
915	Imp. New York Round Purple Top-Briggs	B. seeds & F. Seed
916	Large New York Purple-Buckbee	B.seeds & dust
917	Improved Large Purple-Ferry(order)	B.seeds
918	New York Improved-Boston	F.seeds
919	New York Improved-Rothschilds	B.seeds
920	New York Improved-Fair	
921	New York Improved-Siegel & Cooper	

Egg Plant

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
901	.05	3.955	000	000	5	27.00	27.00
902	.05	2.260	.050	.0221	5	<u>79.50</u>	77.70
903.	.03	1.758	.037	.0211	5	64.50	63.10
904	.10	2.978	.008	.268	6	28.50	28.50
905	.04	3.195	.025	.0774	5	59.50	59.00
906	2.616	2.616	.065	.0256	7	47.50	46.30
907	.03	1.601	.041	.0256	5	58.00	56.50
908	.05	6.133	.057	.93	5	51.00	50.75
909	.05	2.506	.058	.0233	5	22.50	22.00
910	.04	1.193	.014	.018	5	32.50	32.00
911	.10	3.864	.157	.408	5	67.50	64.70
912	.05	5.756	.040	.674	8	58.00	57.50
913	.05	1.549	.030	.193	5	57.00	56.50
914	.05	1.969	.060	.305	10	2.00	1.940
915	.05	2.564	.085	.0331	6	25.00	24.20
916	.04	2.108	.032	.151	8	12.00	12.00
917	.05	2.224	.018	.811	5	48.00	47.75
918	.01	1.018	.014	1.38	6	59.00	58.78
919	.01	.981	Trial	000	8	64.50	64.50
920	.01	.610	Trial	000	6	25.50	25.50
921	.01	.749	000	000	7	58.65	58.65





Endive

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
1001	Green Curl-Henderson	Chaff
1002	Green Curl-Alneer	Sand
1003	Green Curl-Vaughan	Cinders
1004	Green Curl-Leonard	Dirt F.seeds
1005	FineGreen Curled-Buckbee	Chaff dirt
1006	Thick Leaved-Elgin	Dirt chaff
1007	Moss Curled-Shumway	Chaff F.seeds
1008	New Moss Curled-Great Northern	Chaff
1009	Green Curled-Burpee	
1010	Moss Curled-Barnard	Dirt F.seeds
1012	Green Curled-Ferry (box)	Cinders
1013	White Curled-Crosman	Chaff F.seeds
1014	Curled-May(box)	Chaff B.seeds
1015	Green Curled-Briggs	Chaff F.seeds
1016	Green Curled-May(order)	Chaff F.seeds
1017	Large Green Curled-Ferry (order)	
1018	Green Curled-Siegel Cooper	Dirt wheat
1019	Curled-Boston	Dirt F.seeds
1020	Green Curled-Fair	

Endive

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
1001	.05	4.053	.047	1.16	2	86.50	85.50
1002	.03	2.319	.0023	.990	2	82.25	82.00
1003	.05	7.131	.033	.463	2	81.75	81.50
1004	.05	8.825	.082	.979	2	83.50	83.00
1005	.03	4.176	.113	2.71	2	88.25	85.50
1006	.05	1.878	.113	6.91	3	26.25	24.30
1007	.03	4.781	.335	.701	2	58.25	54.10
1008	.04	2.346	.005	.342	2	75.00	74.75
1009	.05	4.901	.000	.000	4	<u>91.75</u>	91.75
1010	.05	5.530	.105	1.90	2	64.75	63.50
1012	.05	4.713	.004	.86	4	76.50	76 6.00
1013	.05	3.303	.071	2.15	2	17.25	16.80
1014	.05	2.548	.075	2.94	2	74.75	72.10
1015	.05	3.371	.291	.542	4	29.00	27.45
1016	.05	2.269	.025	1.10	2	74.50	73.75
1017	.05	2.821	.00	.00	4	84.75	84.75
1018	.01	3.401	.062	1.82	2	60.00	59.50
1019	.01	3.346	.058	1.73	2	57.50	56.75
1020	.01	1.557	.00	.00	4	65.25	65.25







Endive.

Germination Standard 89-94. Date of test, Oct. 1, 1903.

Purity Standard 97 percent. Date of test, Feb. 18, 1904.

Date weighed, July 6, 1903. Range of temperature 62°-95°.

Number of seeds per test 200. Method of testing, blotting paper.

Duration of test 14 days.

Kohl-Rabi.

Germination Standard 83-88. Date of test, Sept. 30, 1903.

Purity Standard 98 1/2 percent. Date of test, Feb. 23, 1904.

Date weighed, Apr. 3, 1903. Range of temperature 62°-95°.

Number of seeds per test 100. Method of testing, blotting paper.

Duration of test 10 days.

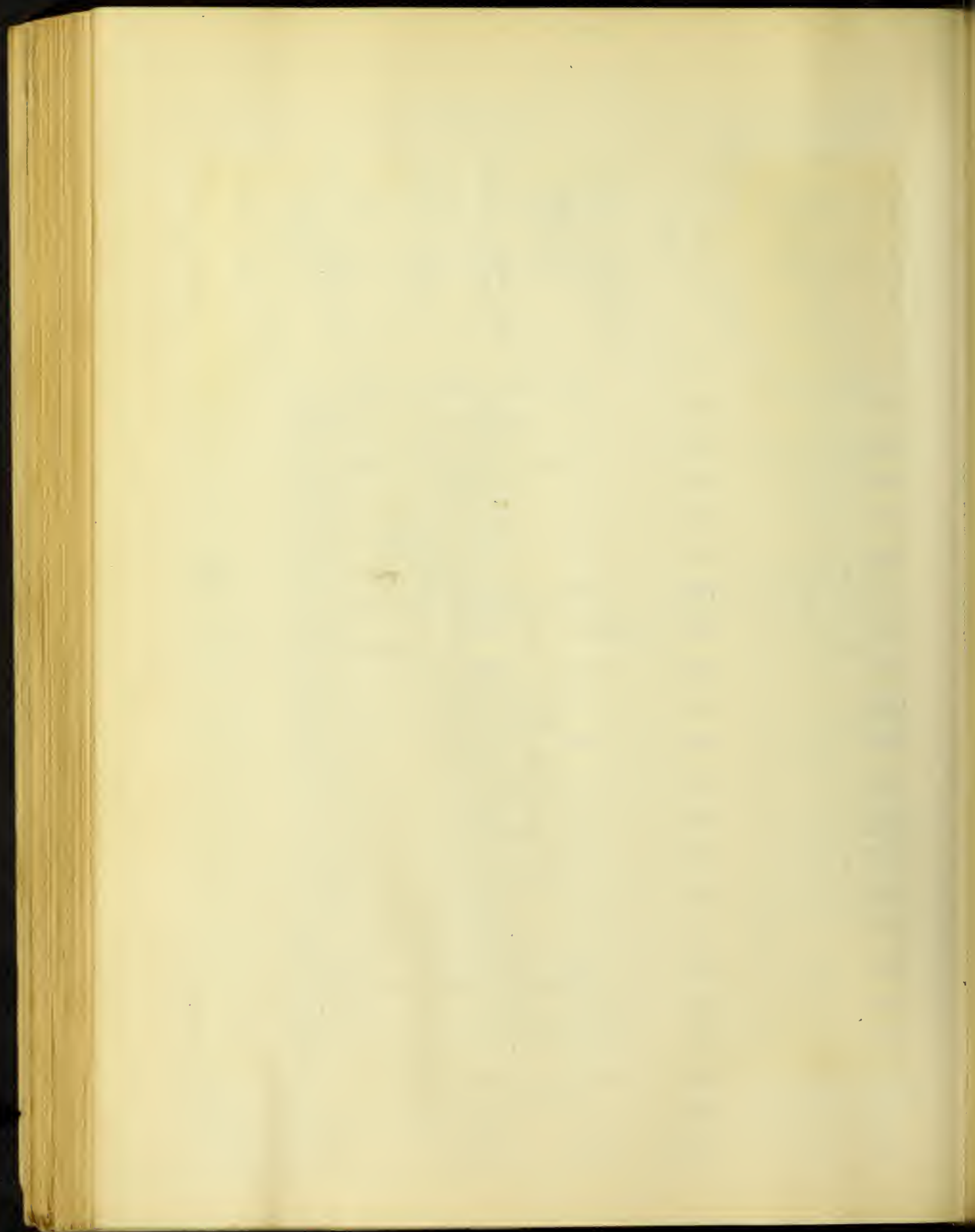
Nearly all the seeds germinated in two days. Those not germinating rapidly moulded badly.

Kohl Rabi

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
1101	Early White Vienna-Henderson	B.seeds sand
1102	Early White Vienna-Alneer	
1103	Early White Vienna-Barnard	B.seeds dirt
1104	White Vienna-Leonard	
1105	White Vienna-Leonard	
1106	White Vienna-Elgin	B.seeds sand
1107	Early White Vienna-Buckbee	B.seeds sand
1108	White -Shumway	dirt F.seeds
1109	Early White Vienna-Vaughan	dirt
1110	Best Vienna-Great Northern	stones B.seeds
1111	Early White Vienna-Burpee	B.seeds
1112	White Vienna-Landreth(box)	dirt
1113	Early White Vienna-Ferry(box)	B.seeds F.seeds
1114	Early White Vienna-Crosman	B.seeds dirt
1115	Large Purple-Briggs	B.seeds dirt
1116	Early White-May(box)	dirt
1117	White Vienna-Landreth(order)	B.seeds
1118	Early White Vienna-Ferry(order)	B.seeds
1119	White Vienna-Fair	B.seeds dirt
1120	White Vienna-Siegel Cooper	B.seeds F.seeds
1121	Kohl Rabi-Rothschilds	B.seeds dirt

Kohl Rabi

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
1101	.05	3.968	.040	.010	2	<u>95.50</u>	94.50
1102	.04	4.479	000	000	2	69.50	69.50
1103	.05	8.441	.038	.0450	2	<u>84.50</u>	84.25
1104	.05	2.201	000	000	2	<u>85.50</u>	85.50
1105	.05	2.649	000	000	2.50	79.50	79.50
1106	.05	5.081	.006	.0138	5	43.00	42.50
1107	.04	2.793	.017	.0609	2	<u>94.00</u>	93.50
1108	.04	4.520	.013	.0288	2	75.00	75.00
1109	.05	6.018	.020	.0333	2	<u>96.50</u>	96.25
1110	.04	2.274	.040	.0170	2	<u>91.00</u>	90.50
1111	.05	3.575	.051	.0143	2	<u>95.00</u>	94.50
1112	.05	2.691	.027	.0161	2	<u>84.50</u>	84.75
1113	.05	4.223	.013	.0308	2	<u>87.50</u>	87.25
1114	.05	6.134	.064	.0104	7	30.00	29.60
1115	.05	8.441	.026	.038	5	2.50	2.45
1116	.05	4.419	.0385	.0873	6	4.50	4.25
1117	.05	2.582	.005	.197	2	<u>85.50</u>	85.25
1118	.05	3.976	.019	.479	2	<u>95.50</u>	95.00
1119	.01	2.116	.021	.995	6	9.00	8.75
1120	.01	1.728	.007	.407	2	<u>86.50</u>	86.25
1121	.01	2.149	.610	.0214	2	<u>90.50</u>	90.25





Lettuce

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
1201	Hanson-Elgin	chaff cinders
1202	Hanson-Shumway	B.seeds dirt
1203	Hanson-Henderson	chaff dirt
1204	Improved Hanson-Alneer	dirt
1205	Hanson-Elgin	chaff cinders
1206	Hanson-Burpee	B.seeds dirt
1207	Improved Hanson-Vaughan	chaff cinders
1208	Hanson-Burroughs	dirt chaff
1209	Hanson-Leonard	dirt chaff
1210	Hanson-Barnard	dirt chaff
1211	Improved Hanson-Buckbee	dirt
1213	Improved Hanson-Templin	chaff dirt
1214	Improved Hanson-Martz	
1215	Hanson-Hammond	chaff dirt
1216	Early Curled Simpson-Alneer	chaff dirt
1217	Early Curled Simpson-Missouri Valley	dirt chaff
1218	Prize Head-Haskin	dirt chaff
1219	Prize Head-Forrest	dirt chaff
1220	Prize Head-Graves	chaff cinders
1221	New Iceberg-Great Northern	

Lettuce

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. P	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. V	Real Value. $\frac{P \cdot V}{100}$
1201	.05	1.228	.017	1.39	2	<u>95.30</u>	94.00
1202	.03	6.971	.189	2.71	2	76.25	74.20
1203	.05	5.086	.018	.354	2	83.75	83.50
1204	.04	3.061	.018	.588	2	<u>95.35</u>	95.00
1205	.05	1.326	.015	1.14	3	<u>93.75</u>	91.70
1206	.05	4.831	.030	.624	2	<u>94.75</u>	94.25
1207	.05	6.066	.037	.611	2	<u>96.50</u>	96.00
1208	.06	6.711	.037	.551	2	82.75	82.50
1209	.03	2.076	.065	.413	2	<u>100.00</u>	96.96
1210	.05	6.951	.095	1.37	4	<u>95.75</u>	95.25
1211	.03	3.481	.017	4.88	2	<u>85.75</u>	81.50
1213	.02	6.286	.100	.628	2	83.25	82.75
1214	.015	.889	000	000	2	<u>87.50</u>	87.50
1215	.05	5.731	.500	.873	2	<u>93.50</u>	84.40
1216	.02	2.479	.017	.863	2	<u>92.00</u>	91.50
1217	.02	9.386	.330	.404	2	80.25	80.00
1218	.01	2.311	.01	.476	2	<u>88.25</u>	88.00
1220	.0125	5.846	.105	.180	2	<u>97.50</u>	97.25
1219	.016	4.896	.059	1.21	2	<u>94.50</u>	93.75

2- Lettuce

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
1222	Iceberg-Burpee	dirt F.seeds
1223	California Cream Butter-Missouri Valley	dirt
1224	California Cream Butter-Iowa	chaff F.seeds
1225	Morse-U.S. Dept. Agriculture	chaff dirt
1226	Salamander-May	dirt cinders
1227	Daybreak-Buckbee	dirt F.seeds
1228	Forcing-Hammond	dirt F.seeds
1229	Grand Rapids-Hammond	dirt F.seeds
1230	Morning Hustler-Bell	chaff
1231	Denver Market-Anderson	chaff F.seeds
1232	Russian Salad-Buckbee	dirt F.seeds
1233	Five Heading Sorts-Isbell	dirt F.seeds
1234	Ten Splendid Sorts-Mills	dirt chaff
1235	Twenty Five Peerless Varieties-Salzer	dirt
1236	Twelve Kinds-Buckbee	dirt chaff
1238	No.272-Buckbee	F.seeds
1239	No.903-Great Northern	dirt F.seeds
1240	Hanson Head-Landreth(box)	chaff
1241	Hanson-Crosman	chaff dirt
1242	Improved Hanson-Rice	chaff
1243	Hanson-Ferry(box)	dirt F.seeds

2- Letuce

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
1221	.04	3.576	000	000	3	75.00	75.00
1222	Trial	4.021	.022	.547	2	<u>94.75</u>	94.25
1223	.02	4.101	.020	.488	2	84.00	83.50
1224	.05	6.511	.020	.307	2	<u>97.50</u>	97.25
1225	free	3.626	.045	1.25	2	<u>92.50</u>	91.50
1226	trial	2.701	.034	1.26	2	<u>99.00</u>	97.75
1227	.02	3.703	.050	1.35	4	10.50	10.30
1228	.05	6.736	.193	.287	2	<u>92.75</u>	92.50
1229	.05	6.061	.300	.495	2	18.00	18.00
1230	.006	1.721	.005	.291	2	<u>93.50</u>	93.25
1231	.02	8.591	.203	.295	4	<u>95.50</u>	95.25
1232	.02	2.856	.032	1.12	2	61.25	60.50
1233	.02	4.021	.009	.224	3	54.50	52.25
1234	.02	5.236	.015	.287	2	<u>90.50</u>	90.00
1235	.02	3.884	.050	1.29	2	<u>92.25</u>	91.25
1236	.02	3.929	.052	1.33	3	15.25	14.00
1238	Trial	1.736	.007	.405	7	1.75	
1239	Sample	1.931	.010	1.931	0	00 00	
1240	.05	7.131	.010	.053	2	<u>97.75</u>	97.50
1241	.05	4.126	.075	1.81	2	58.75	58.64

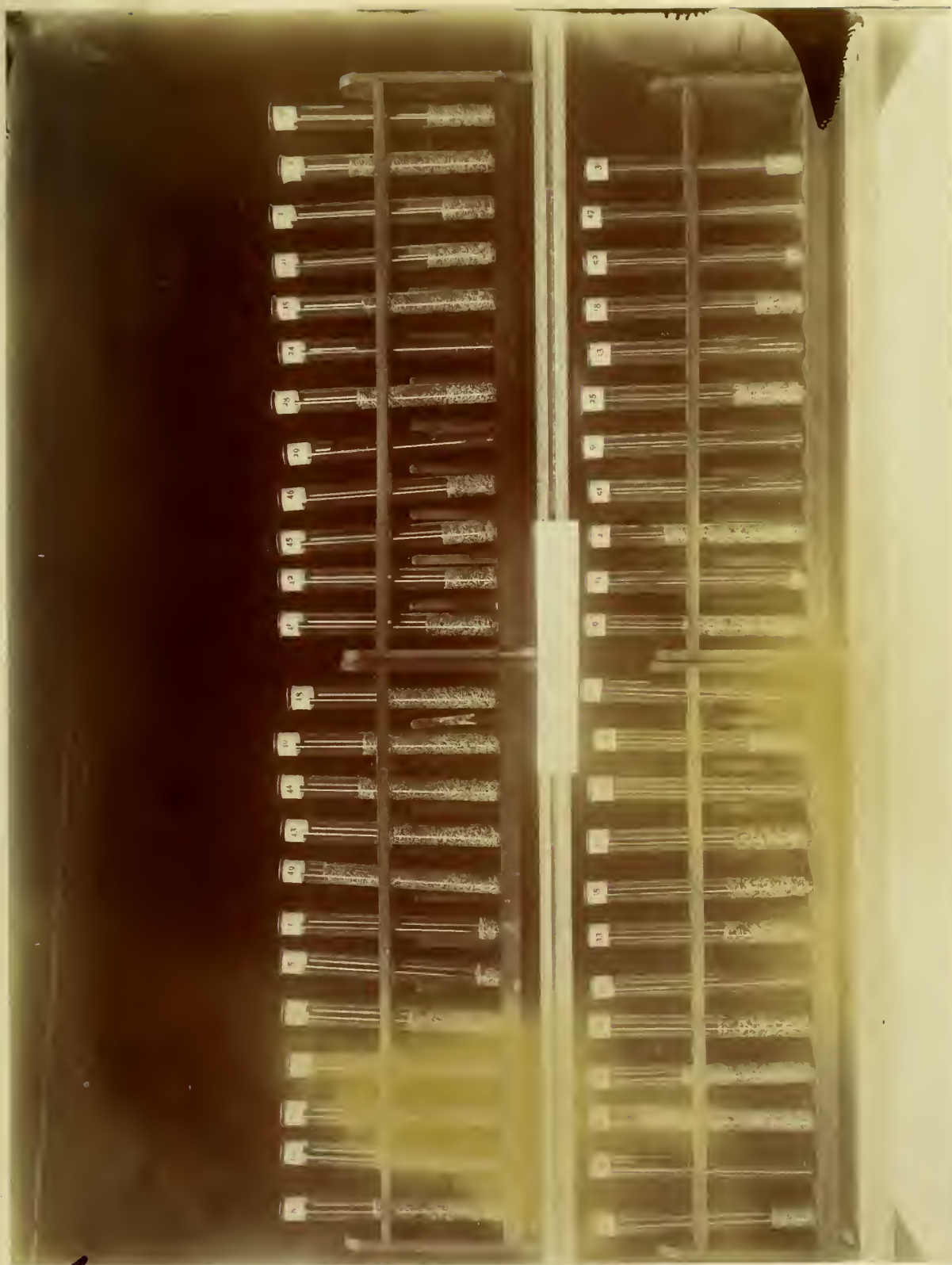
3- Lettuce

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
1244	Hanson-Briggs	chaff F.seeds
1245	Hanson-May(box)	chaff
1246	Hanson-May(order)	dirt
1247	Lettuce-Bunker Hill	dirt
1248	Hanson Head-Landreth(order)	dirt
1249	Hanson-Ferry(order)	dirt
1250	Simpsons Black Seeded-Rothdchilds	dirt F.seeds
1251	Simpsons Black Seeded-Boston	dirt F.seeds
1252	Early Curled Simpson-Fair	
1253	Grand Rapids-Siegel Cooper	dirt

3- Lettuce

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
1242	.05	2.641	.010	2.641	4	83.25	83.00
1243	.05	5.881	.071	1.21	2	<u>94.75</u>	93.50
1244	.05	7.359	.153	2.08	2	<u>85.25</u>	83.25
1245	.05	3.011	.058	1.93	2	<u>92.00</u>	90.75
1246	.05	2.681	.0525	1.96	2	<u>99.00</u>	98.00
1247	.01	.251	.005	.199	4	36.00	35.50
1248	.05	6.786	.035	.516	2	<u>94.75</u>	94.25
1249	.05	7.871	.118	1.50	2	<u>90.75</u>	90.25
1250	.01	3.661	.078	2.13	2	<u>88.25</u>	88.00
1251	.01	3.591	.054	1.56	2	<u>89.00</u>	88.75
1252	.01	.821	000	000	2	78.25	78.25
12.53	.01	3.428	.014	.410	4	<u>92.50</u>	91.75







Lettuce.

Germination Standard 85-90 percent. Date of test, Oct. 24, 1903.

Purity Standard 99 percent. Date of test, Feb. 24, 1904.

Date weighed, July 7, 1903. Range of temperature 58°-90°.

Number of seeds per test 200. Method of testing, blotting paper.

Duration of test 14 days.

The lettuce seed was treated five hours with water at 75°-78° Fahrenheit on the morning of October 24. This was the procedure recommended in the Agricultural Year Book of 1897. The seeds were placed in test tubes and half filled with water of the desired temperature and then placed in a water bath for 5 hours.

Musk Melon.

Germination Standard 85-90 percent. Date of test, Sept. 26, 1903.

Purity Standard 99 percent. Date of test, Feb. 23, 1904.

Date weighed, July 8, 1903. Range of temperature 62°-95°.

Number of seeds per test 100. Method of testing, blotting paper.

Duration of test 14 days.

Muskmelon

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
1301	Netted Gem-Burpee	B.seeds oats
1302	Rocky Ford-Barnard	
1303	Rocky Ford-Alneer	stone pulp
1304	Rocky Ford-Leonard	B.seeds
1305	Rocky Ford-Vaughan	
1306	Rocky Ford-Elgin	
1307	Famous Rocky Ford-Buckbee	dried pulp
1308	Rocky Ford-Great Northern	
1309	Rocky Ford-Henderson	B.seeds
1310	Rocky Ford Shumway	
1311	Rocky Ford-Great Northern	dirt
1312	Rocky Ford-Forrest	dirt
1313	Rocky Ford-Bell	
1314	Rocky Ford-Hammond	dirt
1315	Rocky Ford-Missouri Valley	
1316	Hackensack-Hammond	
1317	New Columbus-Alneer	
1318	Several Best Varieties Mixed-Templin	dirt
1319	Netted Gem-Ferry(box)	
1320	Casaba-Crosman	
1321	Green Nutmeg-May(box)	pulp

Muskmelon

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. P	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. V	Real Value. $\frac{P \cdot V}{100}$
1301	.05	10.380	.070	.673	3	<u>91.50</u>	91.00
1302	.05	10.020			4	54.50	54.50
1303	.04	5.420	.257	.474	3	75.50	72.00
1304	.05	7.070	.071	1.01	3	<u>88.00</u>	87.00
1305	.05	4.446			3	<u>85.50</u>	85.50
1306	.05	4.945			3	<u>91.50</u>	91.50
1307	.04	6.420	.049	.760	3	<u>97.50</u>	97.80
1308	.04	6.520			3	<u>99.00</u>	99.00
1309	.10	7.150	.017	.240	3	<u>76.50</u>	70.50
1310	.03	6.457			3	<u>89.50</u>	89.50
1311	.04	6.250	.008	.130	3	<u>98.50</u>	98.50
1312	.016	3.533	.007	.190	3	<u>74.00</u>	74.00
1314	.05	3.555	.037	1.04	3	<u>97.00</u>	96.50
1313	.006	3.200			5	<u>88.00</u>	88.00
1315	.02	4.417			3	75.00	75.00
1316	.05	4.310			3	<u>93.80</u>	93.80
1317	.02	5.232			4	65.50	65.50
1318	.02	9.100	.011	.121	3	72.50	72.50
1319	.05	11.660			3	<u>96.50</u>	96.50
1320	.05	5.820			4	53.50	53.50

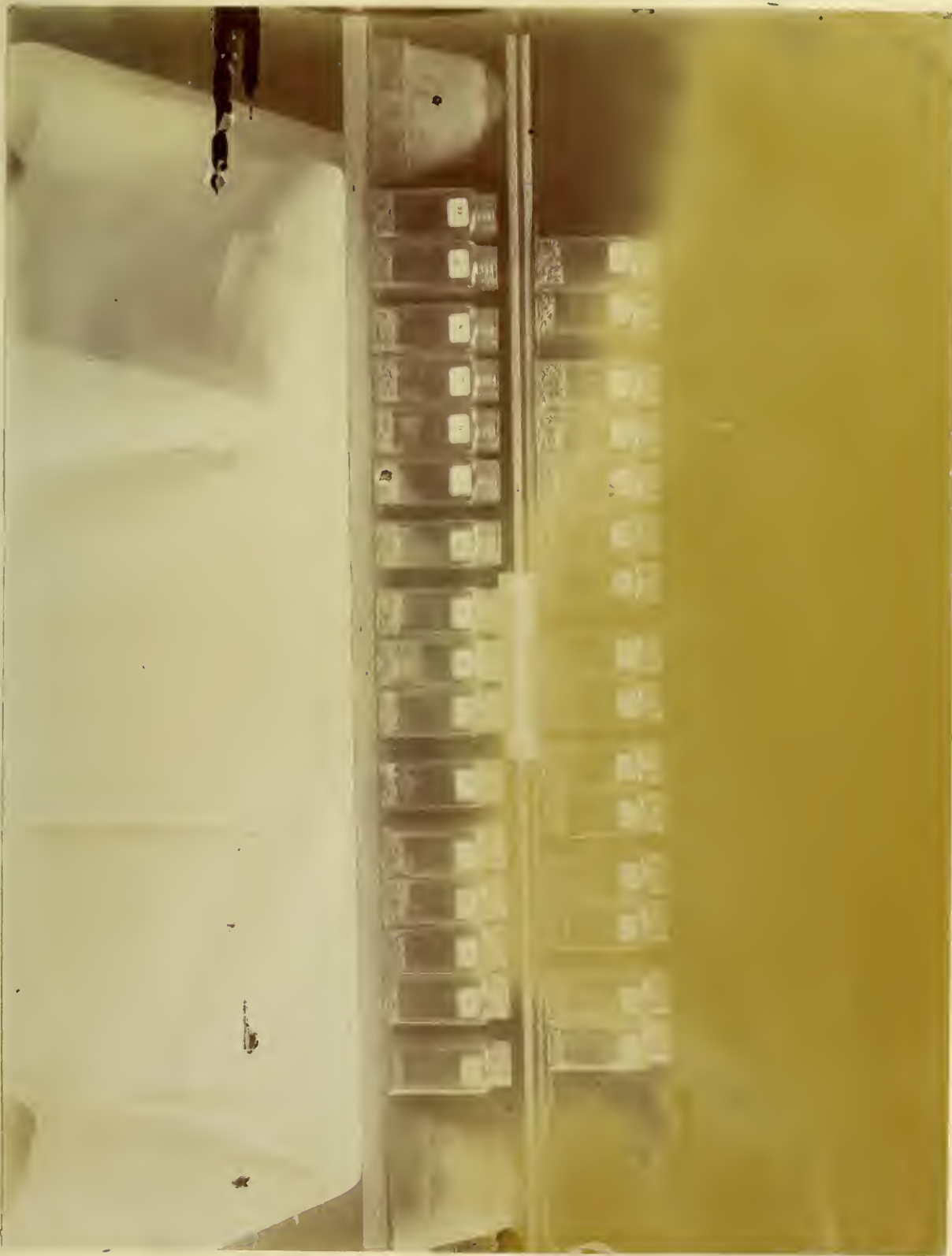
2-Muskmelon

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
1322	Hackensack Improved-Briggs	
1323	Rocky Ford-Landreth (box)	
1324	Rocky Ford-Rice	pulp B.seeds
1325	Early Green Nutmeg-May (order)	
1326	Rocky Ford-Landreth (order)	pulp B.seeds
1327	Melon (water)-Bunker Hill	
1328	Netted Gem-Ferry (order)	B.seeds
1329	Green Nutmeg-Rothschilds	
1330	Green Nutmeg-Boston	
1332	Osage-Siegel Cooper	B.seeds pulp
1333	Osage-Fair	

2- Muskmelon

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{P \cdot V}{V}$	Real Value. $\frac{P \cdot V}{100}$
1321	.05	5.425	.010	.542	3	83.00	83.00
1322	.05	8.367			5	62.00	62.00
1323	.05	8.220			3	<u>93.50</u>	93.00
1324	.10	10.345	.068	.066	3	<u>89.00</u>	89.00
1325	.05	4.230			3	<u>86.00</u>	86.00
1326	.05	8.510	.019	.223	3	73.00	73.00
1327	.01	2.693			3	<u>95.60</u>	95.60
1328	.05	10.350	.182	1.75	3	<u>87.50</u>	85.90
1329	.01	6.422			3	<u>83.50</u>	83.50
1330	\rightarrow .01	7.037			5	<u>26.60</u>	<u>26.00</u>
1332	\rightarrow .01	6.736	.038	.565	3	<u>40.50</u>	40.00
1333	.01	2.315			3	84.00	84.00





Watermelon

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
1401	Kolb's Gem-Henderson	pulp B.seeds
1402	Kolb's Gem-Alneer	pulp B.seeds
1403	Perfected Kolb's Gem-Buckbee	pulp B.seeds
1404	Kolb's Gem-Great Northern	pulp B. seeds
1405	Kolb's Gem-Leonard	pulp .seeds
1406	Improved Kolb's Gem-Vaughan	B.seed
1407	Kolb's Gem-Burpee	B.seed
1408	Kolb's Gem-Elgin	B.seed
1409	Kolb's Gem-Barnard	B.seed F.seed
1400	Kolb's Gem-Shumway	dirt F.seed
1411	Wonderful Sugar-Templin	
1412	New Delaware-Alneer	Muskmelon
1413	Kolb's Gem-Hammond	
1414	Dixie-Martz	
1415	Phinney's Missouri Valley	
1416	Wonderful-Hammond	
1417	No. 617-Buckbee	
1418	No. 27-Great Northern	
1419	Kolb's Gem-Ferry (box)	B.seed
1420	Kolb's Gem-Briggs	

Watermelon

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
1401	.25	130.00	.045	.35	3	79.50	79.25
1402	.18	104.00	.669	.643	3	69.50	69.00
1403	.18	108.00	.215	.197	4	22.50	22.25
1404	.15	107.50	.12	.111	3	72.50	72.00
1405	.15	116.00	.31	.267	8	72.50	72.00
1406	.20	129.50	.079	.061	2	<u>85.00</u>	84.75
1407	.25	126.00	.057	.045	4	83.00	76.25
1408	.25	109.2	.060	.055	3	77.00	77.00
1409	.20	114.50	.245	.213	2	<u>86.50</u>	86.25
1410	.15	106.00	.138	.130	3	63.50	63.25
1411	.02	12.92	00	00	2	68.40	68.40
1412	.02	6.965	.230	.331	3	84.00	83.75.
1413	.05	6.06	00	00	5	53.10	53.10
1414	.015	3.41	00	00	3	47.70	47.70
1415	.02	5.51	00	00	3	<u>96.00</u>	96.00
1416	.05	8.975	00	00	3	36.75	36.75
1417	Trial	3.17			3	32.00	32.00
1418	Trial	6.585	00	00	3	80.00	80.00
1419	.05	10.97	.05	.454	6	7.00	6.96
1420	.05	7.055			3	76.00	76.00

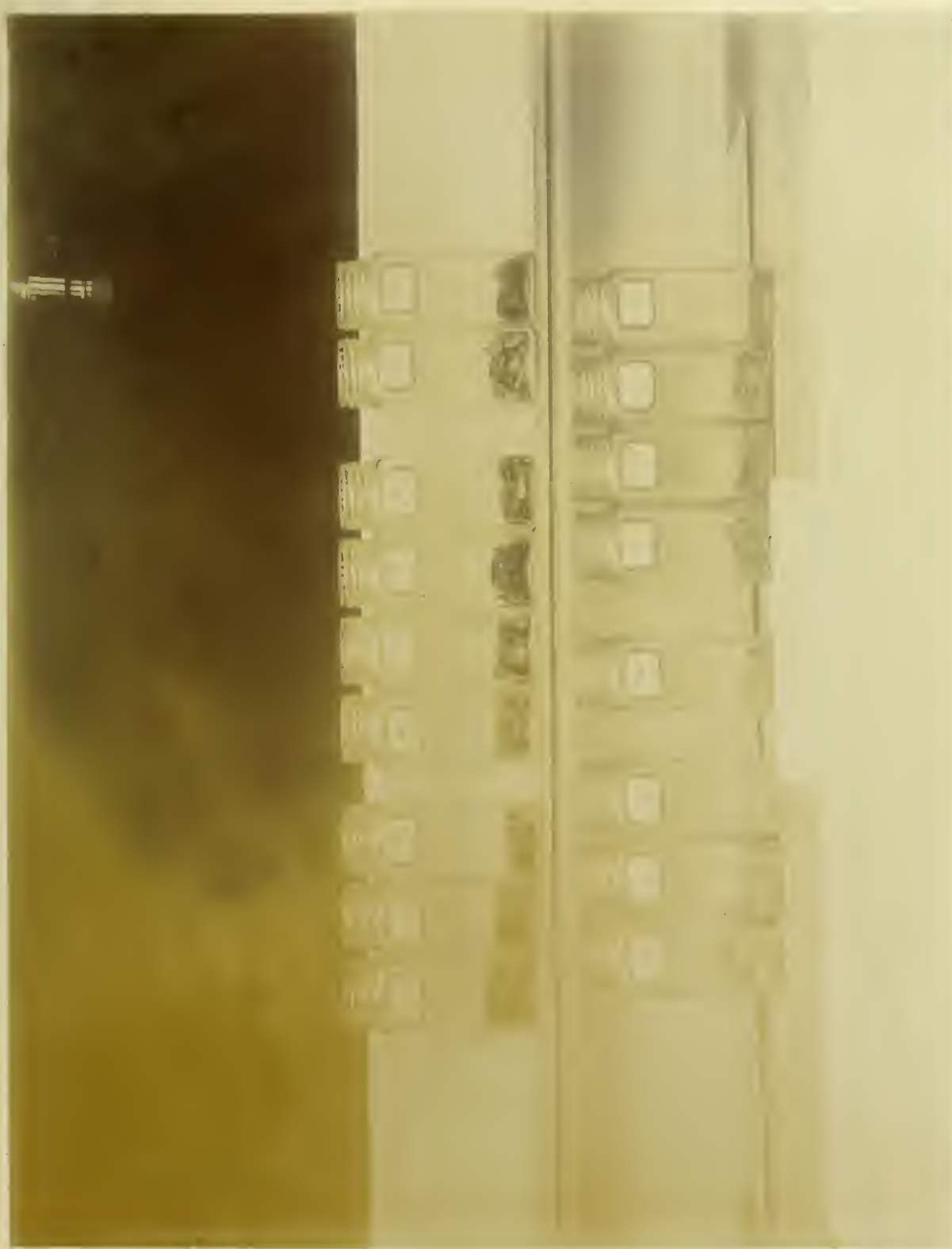
2-Watermelon

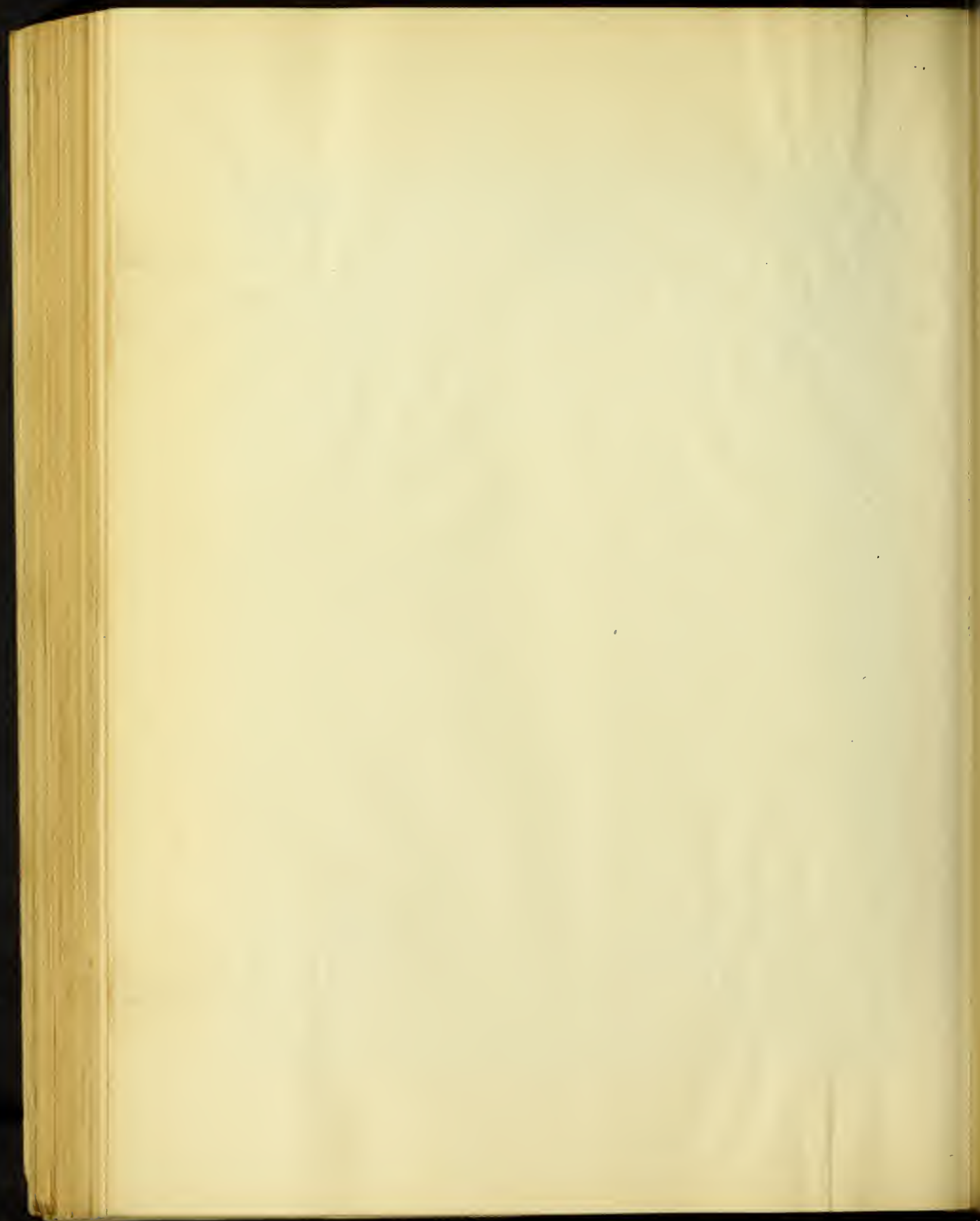
Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
1421	Kolb's Gem-Crosman	wood
1422	Kolb's Gem-Ferry (box)	
1423	Kolb's Gem-Crosman	
1424	Eighty-one lb. Cuban Queen-Rice	
1425	Kolb's Gem-Ferry (order)	
1426	Kolb's Gem-Siegel Cooper	
1427	Vick's Early-Fair	
1428	Kolb's Gem-Boston	
1429	Dixie-Rothschild's	

2-Watermelon

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. P	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. V	Real Value. $\frac{P \cdot V}{100}$
1421	.05	7.587	.020	.264	6	8.00	7.80
1422	.05	6.355	.00	.60	3	78.00	78.00
1423	.05	7.870	00	00	3	84.00	84.00
1424	.05	8.365	00	00	3	76.00	76.00
1425	.05	9.090	00	00	3	79.00	79.00
1426	.01	6.568	00	00	6.	2.00	2.00
1427	.01	2.907	00	00	5	72.00	72.00
1428	.01	5.500	00	00	3	<u>93.90</u>	93.90
1429	.01	5.818	00	00	3	<u>92.00</u>	92.00







Water Melon.

Germination Standard 89-90 percent. Date of test, July 20, 1903.

Purity Standard 99 percent. Date of test, Feb. 26, 1904.

Date weighed, July 8, 1903. Range of temperature 72°-92°.

Number of seeds per test 100. Method of testing, blotting paper.

Duration of test 14 days.

On number 1419 a green mould appeared during the test.

From 1411 on the packets contained only about 55 to 70 seeds, hence only a single test could be made. 113.4 grams makes a quarter of a pound. Note the weights of some of the quarter of pounds purchased.

Onion.

Germination Standard 80-85 percent. Date of test, Oct. 31, 1903.

Purity Standard 99 percent. Date of test, Feb. 24, 1904.

Date weighed, Apr. 4, 1903. Range of temperature 58°-86°.

Number of seeds per test 200. Method of testing, blotting paper.

Duration of test 19 days.

Soak the seed one hour in a $Hg\ Cl_2$ before putting in the test. This made the seeds rather moist for two or three days. At the close of the period the seeds were not removed because of an oversight, but were counted on November 19, 1903 when the seeds were found to be badly moulded. Results were entered on the blank for the 21st day. The duration of test was only 19 days. More or less black chaffy material was found on the interior of the packet.

Onion

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
1501	Early Red Wethersfield-Barnard	B.seed
1502	Large Red Wethersfield-Alneer	B.seeds stones
1503	Large Red Wethersfield-Burpee	B.seed
1504	Wethersfield Large Red-Henderson	B.seeds
1505	Red Wethersfield-Shumway	B.seeds stone
1506	Red Wethersfield-Buckbee	B.seed stone
1507	Red Wethersfield-Great Northern	B.seed
1508	Red Wethersfield-Elgin	B.seed
1509	Red Wethersfield-Elgin	B.seed
1510	Red Wethersfield-Leonard	B.seed
1511	Large Red Wethersfield-Burroughs	B/seed
1512	Red Wethersfield-Elgin	B/seed
1513	Red Wethersfield-Vaughan	
1514	Large Red Wethersfield-Briggs	
1515	Wethersfield Large Red-Rice	
1516	Red Wethersfield-Missouri Valley	
1517	Imp. Red Wethersfield-Hammond	
1518	Large Red Wethersfield-Landreth(box)	
1519	Large Red Wethersfield-Ferry (box)	
1520	Wethersfield Red-Crosman	
1521	Yellow Globe Denvers-May (box)	

Onion.

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
1501	.05	5.416			4	<u>82.75</u>	82.75
1502	.04	4.012			5	61.25	61.25
1503	.05	5.013			4	72.25	72.25
1504	.05	4.107	.006	.141	4	68.25	68.00
1505	.04	5.965	.015	.254	5	69.00	68.50
1506	.04	4.248			6	68.25	68.25
1507	.05	3.520	.004	.114	5	19.00	18.75
1508	.05	1.84	.005	.272	6	42.25	42.00
1509	.05	2.05			6	48.00	48.00
1510	.05	6.589	.007	.108	5	55.25	55.00
1511	.06	6.852	.004	.584	6	47.00	46.50
1512	.05	2.083			6	49.50	49.50
1513	.05	6.937			5	69.25	69.25
1514	.05	8.803	.020	.227	5	3.50	3.25
1515	.05	6.35			4	44.75	44.75
1516	.02	3.814	.009	.236	7	29.25	29.00
1517	.05	4.206			5	62.25	62.25
1518	.05	2.66	.006	.226	6	79.00	78.50
1519	.05	5.139			6	75.00	75.00
1520	.05	7.048	.022	.313	6	15.25	15.00

2- Onion.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
1522	Improved Globe Denvers-Hammond	B.seed
1523	Yellow Globe Denvers-Templin	B.seed
1524	Yellow Globe Denvers-Haskin	
1525	Improved Prize Taker-Hammond	B.seed
1526	Yellow Globe Danvers-Alneer	
1527	New York Yellow Globe-Bell	
1528	Yellow Globe Danvers-Iowa	
1529	South Port Large Yellow Globe Burpee	
1530	Twenty five Wonderful Onions-Salzer	
1531	Flap Danvers-Martz	
1532	Large White Sicily-Shumway	B.seeds
1533	Eight Best Varieties-Buckbee	
1534	Seven Selected Varieties-Mills	B.sees
1535	Winnebago County Prize-Alneer	
1536	Large White Sicily-Shumway	B.seed
1537	Mixed-Shumway	
1538	Yellow Globe Danvers-May (order)	
1539	Large Red Wethersfield-Ferry (order)	
1540	Onion-Bunker Hill	B.seed
1541	Large Red Wethersfield-Landreth (order)	

2- Onion

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. P	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. V	Real Value. $\frac{P \cdot V}{100}$
1521	.05	4.08			7	16.75	16.75
1522	.05	4.118	.003	.073	7	67.25	67.00
1523	.02	7.056	.006	.085	6	77.50	76.75
1524	.01	1.839			6	49.00	49.00
1525	.05	4.263	.003	.0704	5	<u>81.25</u>	80.75
1526	.02	3.923			5	38.25	38.25
1527	.006	1.746	.011	.628	4	56.25	56.00
1528	.05	5.758			4	64.00	64.00
1529	.00	5.217			4	70.00	70.00
1530	.02	4.223			5	66.25	66.25
1531	.015	1.97			5	17.00	17.00
1532	.00	2.343	.006	.256	6	43.00	43.00
1533	.02	3.147			3	4.00	4.00
1534	.02	6.051	.016	.264	9	21.75	21.50
1535	.02	3.924			6	16.25	16.25
1536	.00	3.606	.006	.166	6	57.00	57.00
1537	.00	3.427			6	35.50	35.50
1538	.05	3.286			6	70.75	70.75
1539	.05	5.226			5	<u>91.75</u>	91.75
1540	.01	.461	.021	.455	9	14.00	14.00

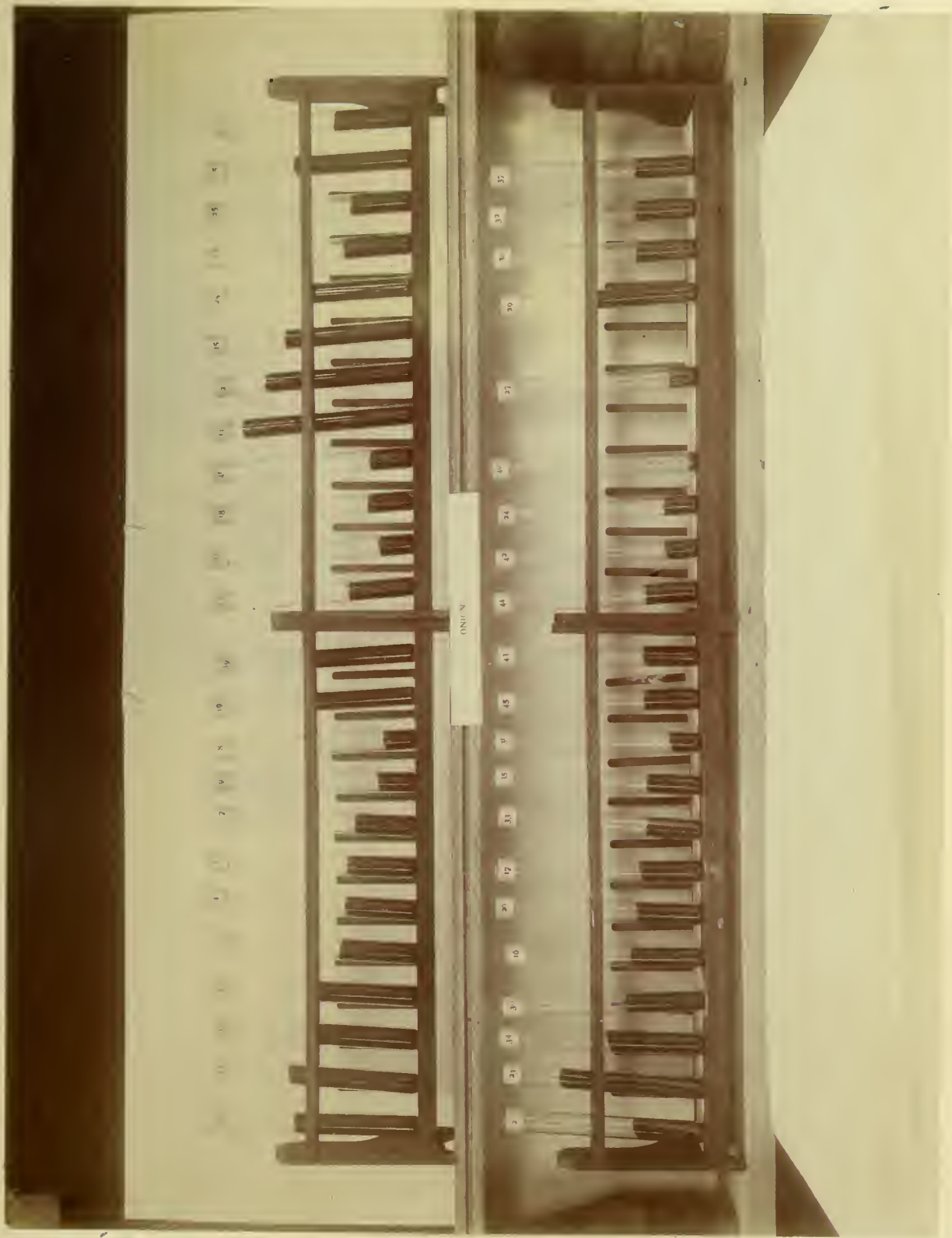
3- Onion

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
1542	Yellow Globe Danvers-Fair	B.seed
1543	Large Red Wethersfield-Boston Store	
1544	Large Red Wethersfield-Siegel Cooper	
1555	Early Red Flap-Rothschild's	
1550	Large Red Wethersfield-U.S. Dept. Ag.	chaff

3- Onion.

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. P	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. V	Real Value. $\frac{P \cdot V}{100}$
1541	.05	2.980			6	<u>92.50</u>	92.50
1542	.01	1.718	.001	.071	5	70.50	70.50
1543	.01	3.142			6	43.25	43.25
1544	.01	3.320			6	60.50	60.50
1545	.01	3.671	.001	.0367	6	49.75	49.75
1550	.00	4.892	.004	.	No	Test	





Parsley

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
1601	Moss Curled-Barnard	chaff dirt
1602	Champion Moss Curled-Henderson	chaff dirt
1603	Champion Moss Curled-Ferry (box)	chaff dirt
1604	Charter's Double Moss Curled-Briggs	chaff F.seeds
1605	New Extra Dark Moss Curled-Burpee	chaff dirt
1606	New Moss Curled-Great Northern	chaff dirt
1607	Champion Moss Curled-Vaughan	chaff F.seeds
1608	Champion Moss Curled-Elgin	chaff dirt
1609	Double Moss Curled-Alneer	chaff
1610	Early Curled-May (box)	chaff dirt
1611	New Moss Curled-Buckbee	chaff dirt
1612	Champion Moss Curled-Templin	chaff dirt
1613	Large Hamburg-Graves	
1614	Dwarf Curled-Hammond	dirt F.seeds
1615	Champion Moss Curled-Leonard	dirt
1616	Fine Curled-Landreth (box)	dirt chaff
1617	Champion Moss Curled-Rice	dirt F.seeds
1618	Fine Double Curled-Crosman	dirt chaff
1619	Moss Curled-Missouri Valley	chaff F. seeds
1620	Moss Curled-Shumway	chaff dirt

Parsley

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
1601	.03	6.331	.014	.205	10	44.25	44.00
1602	.05	8.941	.060	.671	9	72.50	72.00
1603	.05	3.735	.016	.429	9	41.50	41.00
1604	.05	8.686	.140	1.62	0	0	
1605	.05	6.031	.008	.133	10	50.00	50.00
1606	.04	4.164	.012	.289	11	9.75	9.50
1607	.05	6.761	.036	.532	14	29.75	29.75
1608	.05	2.271	.008	.353	11	43.25	43.00
1609	.03	3.446	.005	.145	10	67.00	67.00
1610	.05	5.141	.184	.3580	9	<u>88.00</u>	84.80
1611	.03	3.766	.007	.186	10	64.50	64.00
1612	.02	4.312	.010	.431	11	38.00	38.00
1613	.02	2.399			11	38.00	38.00
1614	.05	5.91	.068	1.15	9	52.00	51.50
1615	.05	6.886	.028	.407	11	20.75	20.50
1616	.05	6.809	.211	.310	9	53.25	51.60
1617	.05	2.949	.025	.846	9	43.25	43.00
1618	.05	3.161	.042	1.33	0	0	
1619	.02	6.116	.055	.921	12	27.50	27.00
1620	.03	5.216	.007	.134	11	<u>71.00</u>	71.00

2- Parsley

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
1621	Extea Curled-May (order)	dirt chaff
1623	Champion Moss Curled-Ferry	dirt chaff
1624	Fine Curled-Landreth (order)	chaff
1625	Double Curled-Rothschild's	chaff F.seeds
1626	Double Curled-Siegel Cooper	chaff
1627	Hamburg-Fair	dirt F.seeds
1628	Moss Curled- Boston	dirt

2- Parsley

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
1621	.05	4.601	.158	.345	8	<u>98.00</u>	94.60
1623	.05	4.139	.074	1.79	9	64.50	63.30
1624	.05	7.081	.004	.056	9	<u>75.25</u>	75.25
1625	.01	3.691	.009	.237	11	27.50	27.25
1626	.01	3.396	.008	.236	11	24.75	24.50
1627	.01	2.941	.026	.884	9	27.75	27.00
1628	.01	3.266	.004	.123	9	43.25	43.25







Parsley.

Germination Standard 70-75 percent. Date of test, Oct. 6, 1903.

Purity Standard 99 percent. Date of test, Feb? 24, 1904.

Date weighed, July 9, 1903. Range of temperature 62°-94°.

Number of seeds per test 200. Method of testing, blotting paper.

Duration of test 14 days.

Package number 1625 was broken when received.

Parsnip.

Germination Standard 70-75 percent. Date of test, Oct. 21, 1903.

Purity Standard 95 percent. Date of test, May, 1904.

Date weighed, July 9, 1903. Range of temperature 58°-90°.

Number of seeds per test 200. Method of testing, blotting paper.

Duration of test 14 days.

No count of the hard seeds was made at the close of the test because of the form of the seed. 1701 packet open when received and part of contents lost. 1729 only 45 seed and a few pieces of chaff in packet.



Parsnip

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
1701	Hollow Crown-Leonard	chaff
1702	Henderson's Hollow Crown-Henderson	chaff
1703	Hollow Crown-Barnard	chaff
1704	Hollow Crown-Elgin	chaff
1705	Hollow Crown-Burpee	chaff
1706	New Sugar-Great Northern	chaff dirt
1707	Improved Hollow Crown-Buckbee	chaff
1708	Hollow Crown-Elgin	chaff
1709	Crown-Burroughs	chaff dirt
1710	Hollow Crown-Vaughan	chaff
1711	Hollow Crown-Alneer	chaff dirt
1712	Hollow Crown-Shumway	chaff
1713	Hollow Crown-Missouri Valley	chaff dirt
1714	Long Sugar-Graves	chaff
1715	Long Sugared-Iowa	chaff dirt leaves
1716	Hollow Crown-Forrest	chaff
1717	Sugar-Martz	
1718	White Sugar-Bell	chaff
1719	Long Smooth-Hammond	chaff dirt
1720	Guernsey-Hammond	chaff dirt

Parsnip.

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{P}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
1701	.05	8.630	.136	5.78	7	63.00	59.335
1702	.05	5.735	.005	.087	8	<u>70.75</u>	70.00
1703	.03	8.025	.094	1.17	7	67.75	67.20
1704	.05	1.840	trace		7	15.75	15.75
1705	.05	7.445	.006	.810	10	54.00	53.50
1706	.05	5.617	.110	1.97	12	2.00	1.96
1707	.03	5.408	.005	.092	8	64.00	63.94
1708	.05	1.340	.003	.22	8	13.50	12.97
1709	.06	8.560	.324	3.78	10	68.50	66.00
1710	.05	6.989	.005	.0725	7	<u>79.50</u>	79.25
1711	.03	3.345	.010	3.00	10	63.00	61.11
1712	.03	6.105	trace		10	<u>70.75</u>	70.75
1713	.02	12.122	.015	.125	10	62.00	61.90
1714	.012	3.346	.005	.149	7	55.25	54.91
1715	.05	8.505	.030	.353	7	54.00	53.75
1716	.016	3.396	.100	2.38	8	63.75	61.90
1717	.015	1.250	trace		10	23.00	23.00
1718	.006	4.808	.030	.625	10	<u>70.00</u>	69.51
1719	.05	4.170	.216	5.19	8	22.00	20.85
1720	.05	4.040	.116	2.80	8	26.25	25.27

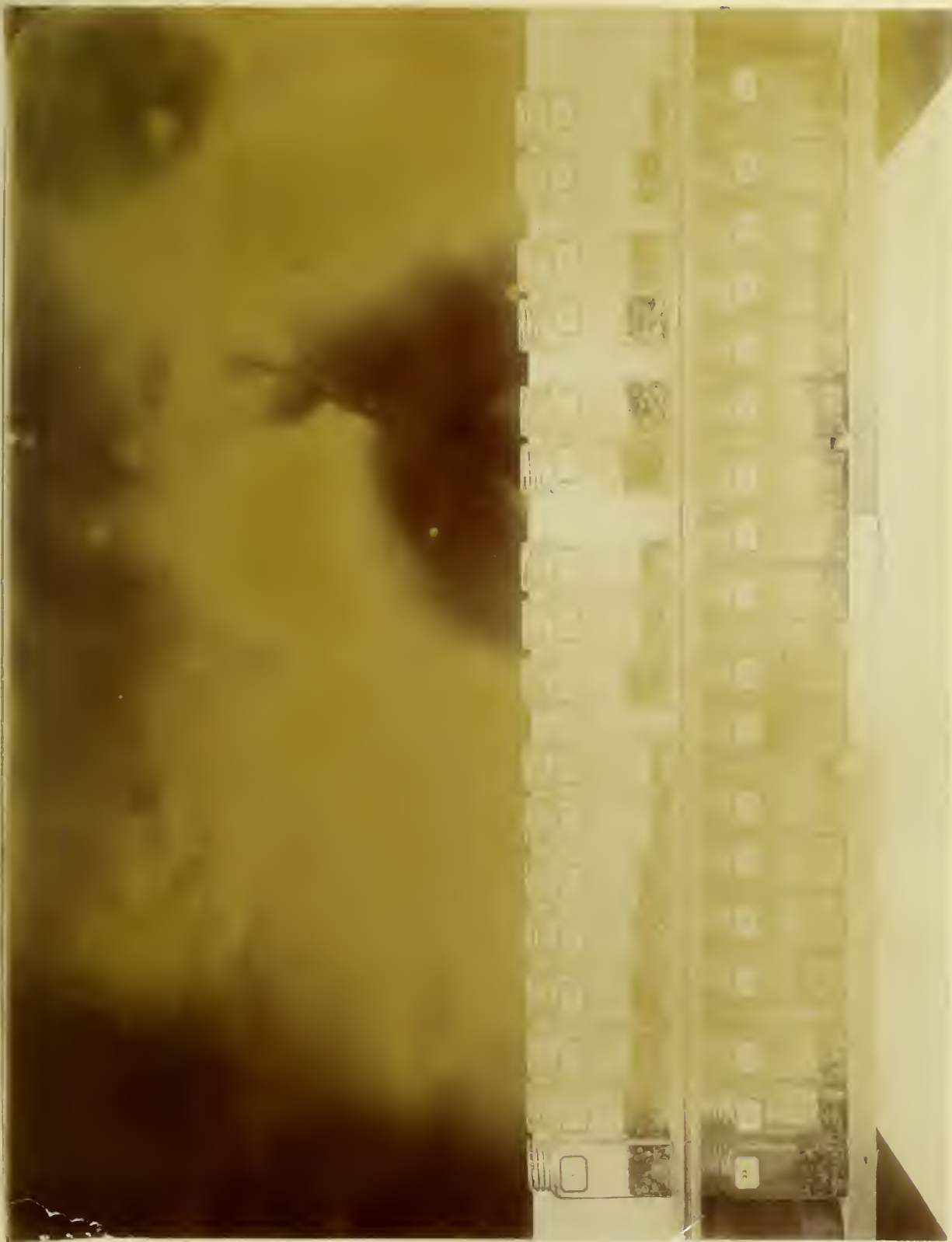
2- Parsn'p

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
1721	ImprovedGuernsey-Templin	chaff dirt
1722	Hollow Crown-Briggs	chaff
1723	Hollow Crown-Ferry (box)	chaff
1724	Hollow Crown-Landreth (box)	chaff dirt
1725	Long White Duck-Rice	chaff dirt
1726	Hollow Crown-May	chaff
1727	Improved Hollow Crown-Crosman	chaff
1728	Hollow Crown-May (order)	chaff
1729	Parsn'p-Bunker Hill	
1730	Hollow Crown-Ferry (order)	chaff
1731	Hollow Crown-Landreth (order)	chaff F.seed
1732	Hollow Crown-Rothschild's	chaff
1733	Long Smooth-Fair	chaff
1734	Hollow Crown-Boston	chaff
1735	Hollow Crown-Siegel Cooper	chaff

2- Parsnip

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
1721	.02	17.200	.096	.557	10	<u>72.25</u>	25.27
1722	.05	8.953	.200	2.24	0	00 00	00.00
1723	.05	6.017	.050	.334	8	27.00	26.73
1724	.05	7.050	.085	1.16	8	27.25	26.50
1725	.05	3.500	.053	1.65	8	20.75	20.00
1726	.05	5.587	.100	1.74	7	63.75	62.64
1727	.05	3.550	.010	.232	7	<u>75.00</u>	74.85
1728	.05	2.260	trace		8	64.50	64.50
1729	.01	45 seeds	0 00	00	8	.088	.03
1730	.05	7.890	.075	.952	10	58.00	57.42
1731	.05	7.415	.120	1.64	8	31.25	30.75
1732	.01	3.770	.050	1.35	8	21.75	21.00
1733	.01	2.075	.050	2.41	7	56.75	55.50
1734	.01	4.115	.075	1.83	10	33.00	31.40
1735	.01	4.020	.035	.87	8	24.75	24.00





Pea

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
1801	Heroine-Shumway	B.seeds
1802	Heroine-Leonard	B.seeds
1803	Heroine-Burpee	B.seeds
1805	Heroine-Alneer	B.seeds
1806	Heroine-Vaughan	
1807	Heroine-Barnard	dirt F.seeds
1808	Heroine-Henderson	B.seeds
1809	New Heroine-Buckbee	
1810	New Heroine-Great Northern	B.seeds
1811	Heroine-Elgin	B.seeds
1812	Henderson's First of All-Templin	
1813	Market Garden-Hammond	B.seeds
1814	Earliest and Best-Hammond	
1815	First And Best-Missouri Valley	
1816	Champion of England-May 1902	
1817	Champion of England-May (box)	chaff
1818	Champion of England-May (box)	dust
1819	McCleane's Little Gem-May (box)	
1820	McClean's Little Gem-May (box)	B.seeds
1821	Champion of England-Rice	B.seeds

Peas

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
1801	.09	162.2	.695	.429	7	89.00	88.50
1802	.L0	237.00	2.278	.962	7	70.00	69.50
1803	.L0	107.2	1.496	1.40	7	88.00	87.75
1804	.L0	152.00	1.000	1.52	7	88.00	87.75
1805	.L0	152.00	1.000	1.52	7	88.00	87.75
1806	.10	89.00	00	00	7	80.00	80.00
1807	.10	223.40	.779	.349	7	93.00	92.75
1808	.10	161.00	1.367	.851	7	61.00	60.75
1809	.12	167.00	00	00	7	76.00	76.00
1810	.12	219.40	1.46	.667	7	56.00	55.50
1811	.12	277.50	2.668	.967	7	85.00	84.50
1812	.02	59.50	00	00	7	90.00	90.00
1813	.02	54.00	.368	.681	3	85.00	84.40
1814	.02	58.00	00	00	7	80.00	80.00
1815	.02	66.50	00	00	7	90.00	90.00
1816	.05	39.00	00	00	7	51.00	51.00
1817	.05	32.96	.263	.799	No	Test	
1818	.05	32.768	00	00	No	Test	
1819	.05	35.00	00	00	7	86.00	86.00
1820	.05	34.00	.204	.60	4	92.00	91.50

2- Pea

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
1822	Champion of England-Crosman	B.seeds
1823	Mc Clean's Little Gem-Ferry (box)	
1824	Champion of England-Ferry (box)	B.seeds
1825	Mc Clean's Little Gem-Briggs	B.seeds
1826	Mc Clean's Little Gem-May (order)	B.seeds
1827	McClean's Little Gem-May (order)	
1828	Champion of England-Ferry (order)	
1829	McClean's Little Gem-Rothschild's	
1830	McClean's Little Gem-Boston	
1831	McClean's Little Gem-Rothschild's	B.seeds
1832	McClean's Little Gem-Boston	B.seeds

2- Peas

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
1821	.10	230.00	2.56	1.11	7	78.00	77.00
1822	.10	187.00	.96	.513	7	40.00	39.50
1823	.10	190.00	00	00	7	60.00	60.00
1824	.10	185.00	.34	.184	7	65.00	64.75
1825	.10	183.00	.834	.455	7	70.00	69.50
1826	.05	38.00	.124	.326	3	<u>95.00</u>	94.50
1827	.05	37.00	00	00	3	<u>98.00</u>	98.00
1828	.10	79.70	00	00	7	<u>94.00</u>	94.00
1829	.01	33.00	00	00	7	72.00	72.00
1830	.07	34.00	00	00	7	78.00	78.00
1831	.01	35.00	.15	.429	7	84.00	83.75
1832	.01	28.00	.175	.625	7	<u>98.00</u>	97.50



Pea.

Germination Standard 93-98 percent. Date of test June 8, 1903.

Purity Standard 99 percent. Date of test, March 12, 1904.

Date weighed, Apr. 23, 1903. Range of temperature 67°-90°.

Number of seeds per test 50. Method of testing, Geneva tester.

Sand test, June 9, 1903, in green-house.

Duration of test 7 days in blotting paper, 21 days in sand.

The seeds in the Geneva tester rotted badly because of the uneven length of the pouches, allowing some to touch the water. This test was altogether unsatisfactory, but no seed was available for re-test, in some cases. No. 1802 character of growth in green-house was different from other Heroine peas, being lighter colored foliage and a much ranker growth. No. 1811 entire sample loose in sack when received. No. 1812 made a quick, rapid growth in the sand test. No. 1821, seeds weeviled, when received.

Pepper.

Germination Standard 71-76 percent. Date of test, Apr. 16, 1903.

Purity Standard 99 percent. Date of test, Feb. 25, 1904.

Date weighed, Apr. 3, 1903. Range of temperature 62°-109°.

Number of seeds per test 100. Method of testing, blotting paper.

Duration of test 14 days.

No. 1903, a very bright and clean sample, a little of the flesh still adhering to the seed. No. 1904, seeds dark colored and very poor in appearance. No. 1905, a very nice sample, clean and bright. No. 1908, sample of good color. No. 1911, poor in appearance. No. 1914, sample contains a large quantity of dust, etc.

Pepper

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
1901	Large Bell-Burpee	B.seeds dirt
1902	Bell-Elgin	B.seeds dirt
1903	Large Sweet Spanish-Landreth(box)	B.seeds
1904	Ruby King-Missouri Valley	B.seeds
1905	Large Bell-Great Northern	B.seeds
1906	Large Bell-Henderson	dirt
1907	Ruby King-H Hammond	dirt
1908	Large Bell-Ferry (box)	B.seeds dirt
1909	Burpee's Ruby King-Rice	dirt
1910	Bell-Crosman	dirt
1911	Bell-Shumway	wood
1912	Large Bell-Buckbee	dirt
1913	Bell-Barnard	B.seeds
1914	Large Bell-Alneer	dirt
1915	Large Bell-Leonard	B.seeds
1916	Large Bell-Vaughan	
1917	Bell/Burroughs	dirt
1918	Large Bell-Iowa	dirt
1919	Mixed Peppers-Tamplin	B.seeds stone
1920	Mountain Sweet-Briggs	B.seeds

Pepper

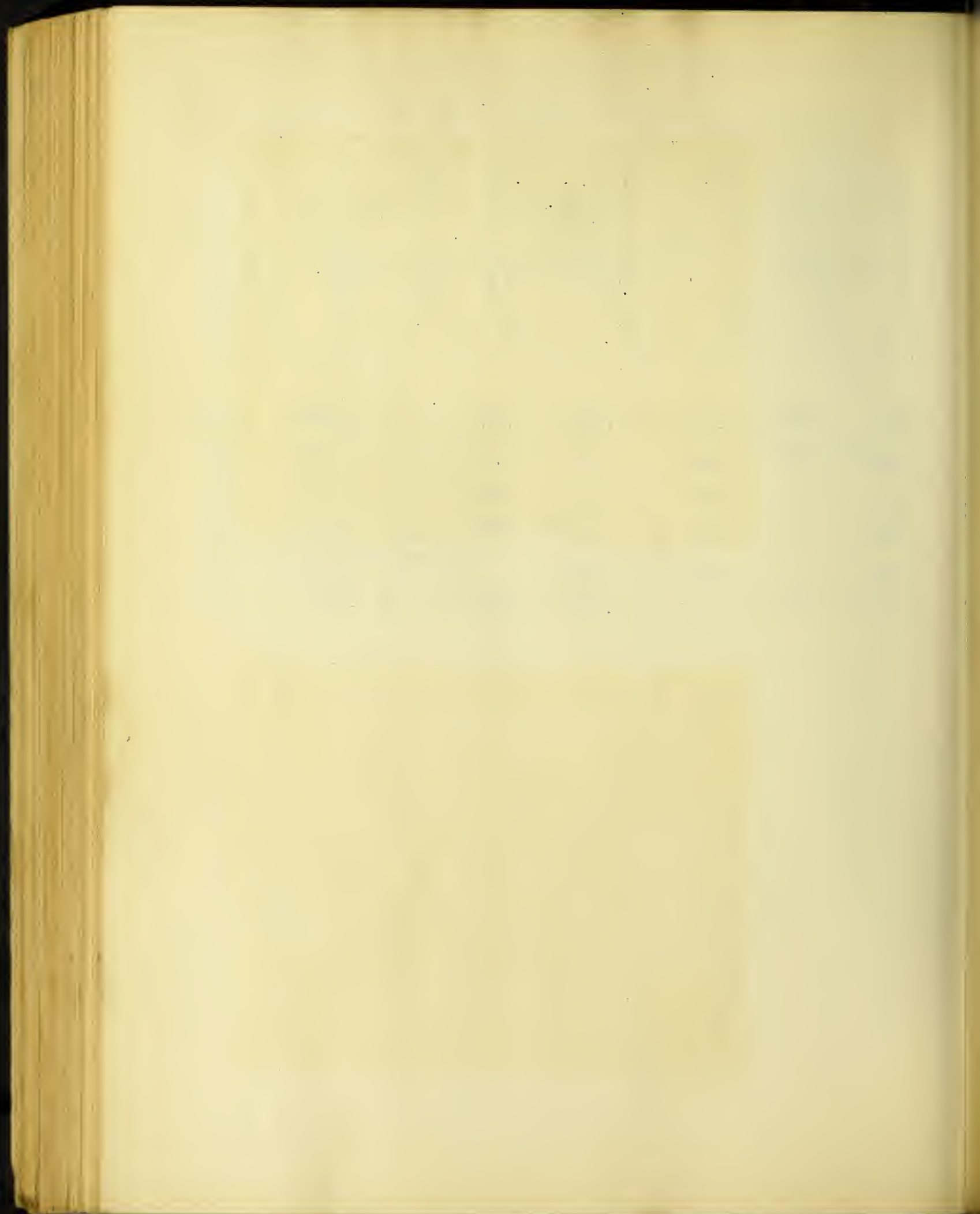
Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. P	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. V	Real Value. $\frac{P \cdot V}{100}$
1901	.05	3.113	.093	2.99	7	<u>76.00</u>	73.70
1902	.05	3.104	.149	4.81	7	43.00	41.00
1903	.05	2.620	.010	.262	5	74.50	74.00
1904	.02	3.391	.051	1.50	7	54.50	53.00
1905	.03	3.850	.005	.130	7	<u>83.00</u>	83.00
1906	.05	2.635	.017	.722	7	62.50	62.00
1907	.05	2.626	.023	.987	10	<u>82.50</u>	81.75
1908	.05	1.588	.005	.503	10	68.00	67.75
1909	.05	.735	Trace		10	46.00	46.00
1910	.05	1.636	.006	.366	12	19.00	18.75
1911	.03	3.422	.020	.584	5	54.50	54.00
1912	.03	3.6328	.020	.550	5	<u>85.00</u>	84.50
1913	.05	5.794	.098	1.68	8	59.00	58.80
1914	.04	2.817	.100	.281	10	43.50	43.25
1915	.05	6.322	.207	.111	4	<u>77.50</u>	77.00
1916	.05	5.204	00	00	5	<u>89.50</u>	89.50
1917	.06	6.640	.020	.301	5	<u>76.50</u>	76.00
1918	.05	3.102	.018	.271	5	<u>75.50</u>	75.00
1919	.02	2.945	.095	3.22	14	26.50	25.60
1920	.05	4.553	.060	1.32	5	61.50	60.70

2- Pepper

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
1921	Large Sweet Spanish-Landreth (order)	B.seeds
1922	Large Bell-Ferry (order)	B.seeds dirt
1923	Sweet Mountain-Boston	
1924	Sweet Mountain-Siegel Cooper	
1925	Large Bell-Fair	
1926	Sweet Mountain-Rothschild's	B.seeds chaff

2- Pepper

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
1921	.05	2.239	.005	.223	5	67.50	67.25
1922	.05	1.742	.020	1.15	10	50.00	49.50
1923	.01	1.536	00	00	6	34.00	34.00
1924	.01	1.537	00	00	14	15.00	15.00
1925	.01	1.060	Trace		10	44.00	44.00
1926	.01	1.96	.055	2.88	5	69.00	67.70



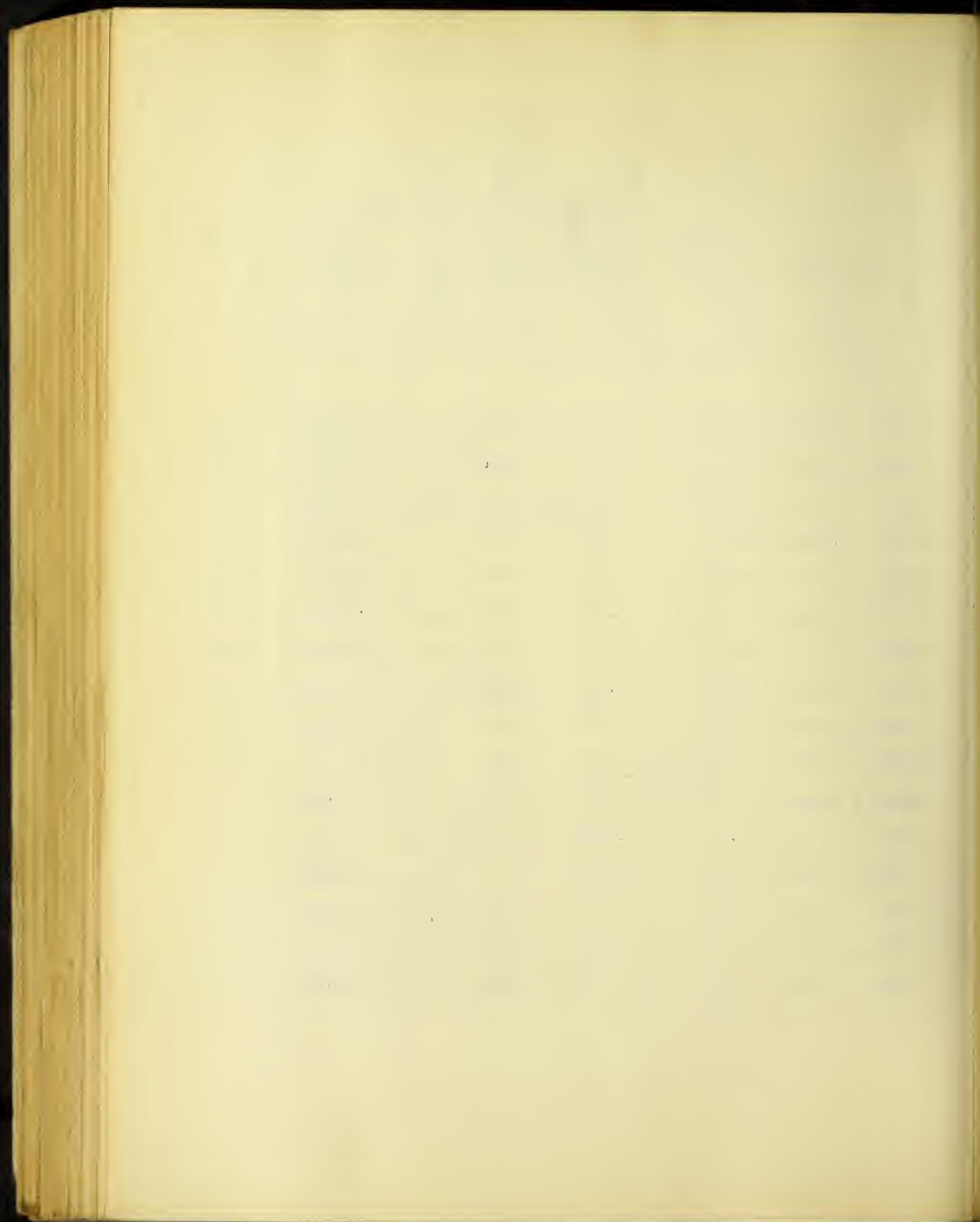


Pumpkin

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
2001	Vaughn's Sugar Pie-Vaughan	B.seeds
2002	True Sugar Pie-Buckbee	B.seeds chaff
2003	Sugar or Pie-Great Northern	B.seeds
2004	Sugar-Elgin	B.seeds
2005	Sugar-Elgin	
2006	Sugar-Henderson	B.seeds
2007	Small Sugar-Burpee	
2008	Large Sheathes-Leonard	B.seeds
2009	Sugar-Barnard	chaff B.seeds
2010	Sugar-Shumway	B.seeds dried pulp
2011	Small Sugar-Alneer	B.seeds F.see s
2012	Quarter Pie-Hammond	B.seeds
2013	Mammoth-Hammond	B.seeds chaff
2014	Common Yellow-Graves	
2015	Sweet or Sugar-Briggs	B.seeds chaff
2016	Sweet or Sugar-Briggs	B.seeds chaff

Pumpkin

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
2001	.25	122.00	.336	.276	3	<u>95.00</u>	94.73
2002	.20	101.00	.469	.464	3	63.50	63.00
2003	.18	104.20	.319	.314	3	<u>97.00</u>	96.69
2004	.05	2.52	.058	.231	3	<u>94.70</u>	94.47
2005	.05	2.841	00	00	3	63.60	63.60
2006	.25	116.00	2.012	1.73	3	<u>96.50</u>	94.93
2007	.25	121.50	00	00	3	<u>85.50</u>	85.50
2008	.15	116.50	1.961	1.69	3	<u>91.5 0</u>	89.95
2009	.20	113.00	.164	.145	3	<u>88.50</u>	88.37
2010	.15	110.00	.278	.253	3	<u>91.00</u>	90.76
2011	.20	110.00	.740	.673	3	<u>87.00</u>	86.41
2012	.05	6.76	.215	3.18	3	<u>86.00</u>	83.26
2013	.05	7.43	.075	.101	3	<u>87.50</u>	87.13
2014	.012	7.81	00	00	3	84.20	84.20
2015	.05	11.57	.312	.272	5	29.70	29.61
2016	.05	8.76	.181	.202	5	40.00	39.91



Pumpkin.

Germination Standard 85-90 percent. Date of test, Aug. 5, 1903.

Purity Standard 99 percent. Date of test, March 7, 1904.

Date weighed, June 18, 1903. Range of temperature 72°-92°.

Number of seeds per test 100. Method of testing, blotting paper.

Duration of test 14 days.

Radish.

Germination Standard 90-95 percent. Date of test, Oct? 17, 1903?

Purity Standard 99 percent. Date of test, March 1, 1904.

Date weighed, April 16, 1903. Range of temperature 58°-94°.

Number of seeds per test 200. Method of testing, blotting paper.

Duration of test 10 days.

Nearly all the samples germinated in two days and very few moulded. No. 2122, very poor in quality. No. 2141, duplicate blown over by the wind and all lost except 17 uns routed seed. No. 2143, only 48 seed in packet.

Radish

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
2101	Breckert's Chartier-Henderson	B.seeds dirt
2102	Improved Chartier-Alneer	B.seeds dirt
2103	Chartier-Burpee	B.seeds dirt
2104	Chartier-Leonard	B.seeds F.seeds
2105	Improved Chartier-Buckbee	B.seeds dirt
2106	Chartier-Barnard	B.seeds dirt
2107	Chartier-Elgin	B.seeds
2108	Chartier-Shunway	B.seeds dirt
2109	Improved Chartier-Vaughan	B.seeds
2110	Chartier-Great Northern	B.seeds
2111	White Turnip-Graves	B.seeds dirt
2112	Rosy Gem-Missouri Valley	B.seeds dirt
2113	Early Deep Scarlet-Hammond	dirt
2114	Scarlet Turnop- Wrenick	dirt B.seeds
2115	White Strassberg-Missouri Valley	B.seeds dirt
2116	Long Scarlet Short Top-Missouri Valley	B.seeds
2117	Long Scarlet-Anderson	F.seeds dirt
2118	Early Oregon-Great Northern	B.seeds F.seeds
2119	Early Robin-Bell	B.seeds F.seeds
2120	Early Scarlet Turnip-Haskin	B.seeds F.seeds

Radish

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
2101	.05	7.322	.100	.732	2	64.25	63.00
2102	.04	7.396	.169	2.29	2	87.00	85.00
2103	.05	7.417	.053	.715	2	86.50	85.50
2104	.03	7.696	.135	1.75	2	82.25	81.00
2105	.04	7.201	.270	3.84	2	89.75	87.50
2106	.05	9.474	.130	1.37	2	<u>92.50</u>	91.75
2107	.05	11.223	.293	2.61	2	<u>95.75</u>	93.50
2108	.04	7.4819	.097	1.27	2	<u>99.50</u>	98.75
2109	.05	7.098	.005	.070	2	83.25	83.00
2110	.04	8.823	.075	.850	2	<u>93.75</u>	93.00
2111	.012	3.951	.005	.127	5	25.75	25.50
2112	.02	7.49	.190	2.66	2	<u>97.25</u>	96.50
2113	.05	6.789	.185	2.58	2	<u>98.75</u>	97.50
2114	.033	21.97	.965	4.41	2	<u>99.75</u>	97.25
2115	.02	5.280	.085	1.61	2	<u>92.25</u>	92.00
2116	.02	5.126	.015	.93	2	79.25	79.00
2117	.02	8.942	.130	1.46	2	85.75	83.50
2118	Gratis	8.493	.118	1.39	2	<u>95.00</u>	94.00
2119	.206	4.712	.045	.955	2	84.25	83.50
2120	.01	3.897	.050	1.28	2	59.74	58.50

2- Radish

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
2121	Rosy Gem-Forrest	B.seeds dirt
2122	Rosy Gem-Martz	B.seeds dirt
2123	Long Scarlet Short Top-U.S.Dept. Agr.	B.seeds
2124	Scarlet Ball-Hammond	dirt
2125	Dark Round Red-Hammond	B.seeds
2126	Early Long Scarlet Short Top-Iowa	
2127	Satisfaction-Great Northern	B.seeds
2128	\$1000 For A Name-Buckbee	B.seeds
2129	No. 738-Buckbee	B.seeds dirt
2130	Seventeen Varieties-Buckbee	dirt
2131	All Season's Mixture-Tamplin	B.seeds
2132	Twenty five Rare Luscious-Salzer	B.seed
2133	Seven Varieties Mixed-Isbell	B.seed dirt
2134	Chartier-May (box)	dirt
2135	Improved Chartier-Rice	dirt
2136	Beckert's Chartier-Briggs	B.seed dirt
2137	Chartier-Landreth (box)	dirt B.seeds
2138	Improved Chartier-Ferry (box)	B.seed dirt
2139	Beckert's Chartier-Crosman	B.seed dirt
2140	Chartier-Landreth (order)	B.seed dirt

2- Radish

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. P	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. V	Real Value. $\frac{P \cdot V}{100}$
2121	.016	8.046	.065	.808	2	72.50	72.00
2122	.015	2.426	.0125	.314	2	35.50	35.25
2123	Trial	6.591	.074	1.12	2	<u>99.75</u>	99.25
2124	Gratis	6.772	.032	.473	2	72.75	72.25
2125	.05	6.622	.057	.861	2	76.75	76.00
2126	.05	3.713	.00	.00	2	86.50	86.50
2127	Trial	4.336	.018	.415	2	89.00	88.50
2128	Prize	6.973	.038	.545	2	<u>95.00</u>	95.50
2129	Trial	3.861	.042	1.09	2	<u>98.25</u>	97.50
2130	.02	4.022	.098	2.44	2	57.00	56.50
2131	.02	10.032	.097	.97	2	70.25	69.50
2132	.02	5.243	.079	1.51	2	72.00	71.50
2133	.02	7.888	.074	.939	2	<u>93.00</u>	92.00
2134	.05	9.156	.084	.918	2	<u>96.00</u>	95.00
2135	.10	15.476	.247	1.59	2	85.25	84.75
2136	.05	12.116	.282	2.33	2	79.75	78.50
2137	.05	8.473	.059	.695	2	<u>91.75</u>	91.00
2138	.05	8.665	.098	1.13	2	88.75	88.00
2139	.05	8.411	.110	1.31	2	85.75	5.00
2140	.05	8.288	.089	1.07	2	<u>94.00</u>	93.50

3- Radish

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
2141	Improved Chartier-Ferry (order)	B.seeds dirt
2142	Chartier-May (order)	
2143	Radish-Bunker Hill	B.seeds
2144	French Breakfast-Fair	
2145	French Breakfast-Boston	
2146	Chartier-Siegel Cooper	
2147	Chartier's-Rothschild's	

3- Radish

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
2141	.05	10.656	.144	1.35	2	82.25	81.50
2142	.05	5.338	.750	1.41	2	86.00	85.75
2143	.01	.542	0	00	2	82.50	82.50
2144	.01	3.016	.029	.960	2	72.00	71.00
2145	.01	2.372	.032	1.35	2	75.50	75.00
2146	.01	3.721	.028	1.753	2	60.75	60.00
2147	.01	3.669	.044	1.19	2	74.50	74.00





Salsify

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
2201	Mammoth Sandwich Island-Vaughan	dirt
2202	Mammoth Sandwich Island-Alneer	dirt
2203	Mammoth Sandwich Island-Burpee	dirt
2204	Mammoth Sandwich Island-Leonard	dirt
2205	Salsify-Crosman	dirt
2206	Mammoth Sandwich Island- Barnard	dirt
2207	Blue Flowered French-Briggs	dirt B.seed
2208	New Mammoth-Great Northern	dirt B.seed
2209	Mammoth Sandwich Island-Henderson	dirt
2210	Salsify-Ferry (box)	dirt rock
2211	Mammoth Sandwich Island-May 1902	dirt
2212	Mammoth Sandwich Island-May (box)	dirt
2213	Mammoth Sandwich Island-Elgin	dirt B.seed
2214	Mammoth Sandwich Island-Buckbee	dirt B.seed
2215	Mammoth Sandwich Island-Iowa	dirt
2216	Salsify-Rice	dirt
2217	Mammoth Sandwich Island-Shumway	dirt
2218	Mammoth Sandwich Island-Hammond	dirt
2219	Mammoth Sandwich Island-May (order)	dirt
2220	Mammoth Sandwich Island-Ferry(order)	dirt
2221	Mammoth Sandwich Island-Boston	dirt B.seed

Salsify

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. P	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. V	Real Value. $\frac{P \cdot V}{100}$
2201	.05	5.664	.040	.707	3	<u>79.00</u>	78.25
2202	.04	3.223	.140	.435	7	<u>84.00</u>	83.50
2203	.05	3.992	.041	1.02	7	64.50	63.25
2204	.05	7.670	00	00	7	51.00	51.00
2205	.05	4.190	.156	3.72	7	00	00
2206	.05	5.87	.043	.732	7	46.00	45.25
2207	.05	9.915	.343	3.46	0	00	00
2208	.05	5.093	.104	2.00	7	<u>80.50</u>	78.50
2209	.10	5.777	.047	.815	7	<u>83.00</u>	82.25
2210	.05	4.455	.103	2.31	7	53.50	51.00
2211	.05	4.688	.079	1.7	0	00	00
2212	.05	4.612	.098	2.12	7	<u>82.25</u>	80.25
2213	.05	2.000	.040	2.00	7	60.00	58.00
2214	.04	5.645	.104	1.84	7	65.50	64.25
2215	.05	4.150	.022	.53	7	59.50	59.00
2216	.05	4.497	.071	1.58	7	32.50	32.00
2217	.04	3.655	.028	.766	7	<u>75.00</u>	74.25
2218	.05	5.090	.194	3.81	8	44.00	43.75
2219	.05	3.025	00	00	7	<u>88.00</u>	88.00
2220	.05	5.62	.038	.677	7	68.50	67.75

2- Salsify

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
2222	Mammoth Sandwich Island-Fair	dirt
2223	Mammoth Sandwich Island-Siegel Cooper	
2224	Mammoth Sandwich Island-Rothschild's	

2- Salsify.

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
2221	.01	2.921	.024	.822	7	45.50	44.75
2222	.01	.930	00	00	7	42.95	42.95
2223	.01	2.277	.019	.837	7	46.87	46.00
2224	.01	1.559	00	00	7	47.47	47.47







Salsify.

Germination Standard 75-80 percent. Date of test, Oct? 5, 1903.

Purity Standard 98 percent. Date of test, Feb. 27, 1904.

Date weighed, July 9, 1903. Range of temperature 62°-60°.

Number of seeds per test 100. Method of testing, blotting paper.

Duration of test 14 days.

The salsify was moulded badly on October 7 and no sprouts were visible. Temperature 88 degrees most of the day. Samples moulded badly during test.

Spinach.

Germination Standard 80-85 percent. Date of test, Aug. 7, 1903.

Purity Standard 99 percent. Date of test, March 2, 1904.

Date weighed, July 10, 1903. Range of temperature 72°-92°.

Number of seeds per test 100. Method of testing, blotting paper.

Duration of test 14 days.

Spinach

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
2301	Long Standing-Burpee	dirt B.seeds
2302	Long Standing-Barnard	dirt
2303	Long Standing-Alneer	dirt
2304	Long Standing-Henderson	dirt
2305	Long Standing-Leonard	dirt B.seeds
2306	Long Standig-Vaughan	dirt B.seeds
2307	Long Standing-Shumway	dirt
2308	All Seasonx-Great Northern	dirt B.seeds
2309	Long standing-Alneer	dirt
2310	Long Standing-Buckbee	B.seed
2311	Long Standing-Elgin	dirt B.seed
2312	Long Standing-Elgin	dirt B.seeds
2313	Long Standing-Iowa	dirt B.seeds
2314	New Long Standing-Tamplin	dirt F.seeds
2315	Victoria-Hammond	dirt wheat
2316	Bloomsdsdale-Hammond	B.seed
2317	No. 1014-Buckbee	dirt
2320	Bloomsdale-May (box)	dirt
2321	Round-Crosman	B.seed

Spinach

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
2301	.05	13.395	.168	1.26	5	50.00	49.25
2302	.05	27.145	.287	1.1	4	74.00	73.50
2303	.02	6.758	.153	2.27	4	<u>83.50</u>	81.00
2304	.05	5.960	.004	.067	5	71.50	71.25
2305	.05	10.248	.094	.902	4	<u>81.00</u>	80.25
2306	.05	30.62	.184	.616	5	70.50	70.00
2307	.02	6.92	.097	1.4	6	70.00	68.75
2308	.04	11.365	.154	.136	6	52.00	51.74
2309	.03	6.463	.075	1.16	5	<u>85.00</u>	85.00
2310	.05	10.905	.013	.119	5	<u>80.50</u>	80.25
2311	.05	3.29	.006	.182	5	67.00	66.75
2312	.05	2.643	.007	.265	6	61.50	61.25
2313	.05	14.900	.109	.779	4	<u>83.50</u>	83.00
2314	.02	8.640	.123	1.42	4	<u>95.00</u>	94.50
2315	.05	8.700	.134	1.54	4	74.50	74.00
2316	.05	6.070	.077	1.27	4	79.50	79.00
2317	Trial	3.852	.010	.266	6	35.00	34.75
2320	.05	7.590	.056	.738	3	<u>86.00</u>	84.25
2321	.05	8.050	.066	.820	7	25.00	24.25

2- Spinach

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
2322	Bloomsdale-Landreth (box)	B.seed
2323	Round Summer-Ferry (box)	B.seed
2324	Long Leaved-Briggs	dirt B.seed
2325	Bloomsdale Savoy Leaved-Rice	dirt B.Seed
2326	Curled Bloomsdale-May (order)	dirt
2327	Round Summer-Ferry (order)	dirt
2328	Bloomsdale-Landreth (order)	dirt B.seeds
2329	Round or Summer-Siegel Cooper	B.seed
2330	Round or Summer-The Fair	dirt B.seed
2331	Round or Summer-Rothschild's	dirt B.seed
2332	Round or Summer-Boston	dirt B.seed

2- Spinach

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
2322	.05	10.892	.051	.472	4	72.00	71.50
2323	.05	6.983	.084	1.20	5	69.50	68.75
2324	.05	16.385	.083	.509	4	49.00	48.50
2325	.05	9.097	.062	.682	3	75.50	75.00
2326	.05	5.303	.068	1.28	3	<u>86.50</u>	85.74
2327	.05	8.570	.160	1.87	5	<u>80.00</u>	78.50
2328	.05	11.968	.062	.521	5	68.50	68.00
2329	.01	6.840	.098	1.43	4	59.50	58.75
2330	.01	6.955	.055	.791	4	70.50	69.75
2331	.01	6.587	.167	2.54	4	68.00	65.50
2332	.01	7.065	.124	1.76	8	66.50	64.75





Squash

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
2401	Giant Crook Neck-Shumway	dirt B.seed
2402	Giant Golden Summer Crook Neck/Alneer	B.seed
2403	Summer Golden Crook Neck-Barnard	B.seed
2404	Giant Summer Crook Neck-Leonard	B.seed
2405	Bush Summer Crook Neck-Henderson	B.seed
2406	Summer Crook Neck-Elgin	dirt B.seed
2407	Summer Crook Neck-Vaughan	dirt B.seed
2408	Giant White Summer Crook Neck-Buckbee	Dirt B.seed
2409	Golden Summer crookneck-Burpee	dirt B.seed
2410	New Giant Summer Crookneck-Great Northern	dirt B.seed
2411	Warty Hubbard-Missouri Valley	
2412	Warted Hubbard-Hammond	dirt B.seed
2413	Giant Bush Summer Crookneck-Templin	dirt
2414	Golden Winter-Bell	
2415	Crookneck-Forrest	B.seed
2416	Early Bush Crookneck-Iowa	dirt B.seed
2417	Giant Crookneck-Hammond	
2418	Hubbard-May (box)	
2419	Early Yellow Bush Scallop-Crosman	
2420	Early White Bush-Landreth (box)	dirt B.seed

Squash

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
2401	.18	128.50	.527	.412	3	71.00	70.50
2402	.18	110.00	.932	.847	2	<u>98.00</u>	97.25
2403	.25	114.00	.324	.284	2	<u>98.50</u>	98.25
2404	.25	118.50	.125	.11	3	<u>92.55</u>	92.25
2405	.25	121.00	.997	.824	2	84.00	83.25
2406	.25	116.00	.245	.213	3	<u>93.00</u>	92.75
2407	.30	120 00	1.302	1.1	2	<u>99.50</u>	99.00
2408	.25	113.00	1.857	1.64	4	<u>88.00</u>	87.50
2409	.30	113.00	.787	.698	2	<u>97.50</u>	97.00
2410	.20	108.50	.947	.876	6	47.50	46.75
2411	.02	4.590	00	00	2	<u>90.00</u>	90.00
2412	.05	4.695	.104	2.21	2	55.00	54.00
2413	.02	4.450	.032	.719	2	<u>96.00</u>	95.25
2414	.006	4.730	00	00	4	28.00	28.00
2415	.016	4.545	.062	1.36	4	66.00	65.25
2416	.05	15.78	.217	1.38	2	<u>96.00</u>	95.00
2417	.05	6.697	00	00	6	54.00	54.00
2418	.05	6.700	00	00	2	<u>100.00</u>	100.00
2419	.05	7.250	.012	.165	2	30.00	29.75
2420	.05	6.470	.123	1.90	2	<u>98.00</u>	97.00

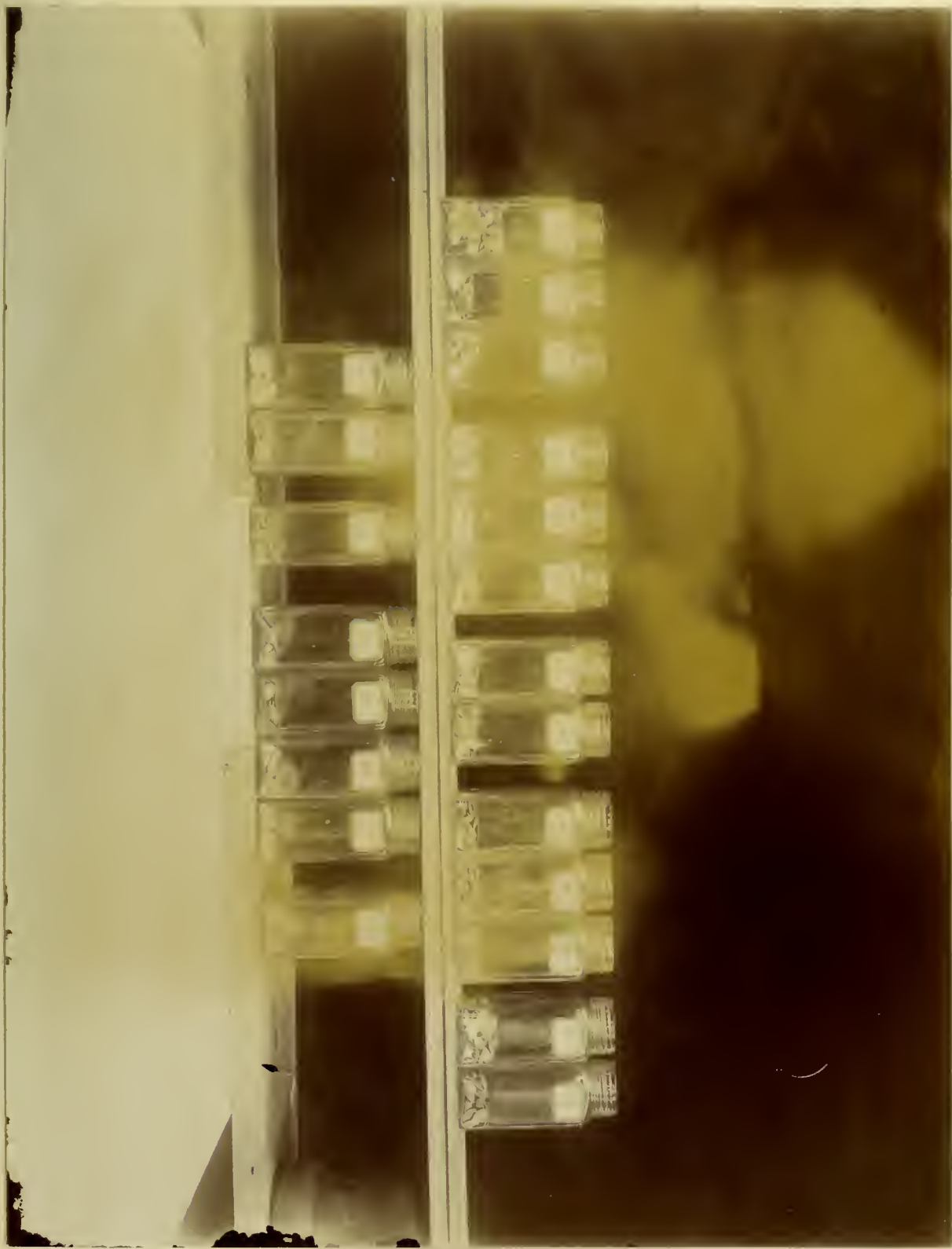
2- Squash

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
2421	Mammoth Yellow Summer Crookneck-Ferry (box) B.seed	
2422	Summer Crookneck-Briggs	dirt B.seed
2423	Early Summer Crookneck-Rice	B.seed
2424	Hubbard-May (order)	dirt B. ² Seed
2425	Hubbard-May (order)	dirt B.seed
2426	Early White Bush-Landereh (order)	
2427	Golden Summer Crookneck-Ferry (order)	
2428	Summer Golden Crookneck-Siegel Cooper	
2429	Summer Golden Crookneck-Fair	
2430	Summer Golden Crookneck-Boston	
2431	Summer Golden Crookneck-Rothschild's	

2-Squash

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
2421	.05	7.950	.080	.10	4	50.00	49.75
2422	.05	7.185	.044	.613	4	13.00	12.50
2423	.05	6.330	.021	.332	2	64.00	63.75
2424	.05	5.740	.289	.504	2	<u>96.00</u>	95.75
2425	.05	6.000	.014	.233	2	84.00	83.75
2426	.05	7.790	No Impurities		2	<u>100.00</u>	100.00
2427	.05	9.230	"	"	2	<u>92.50</u>	92.50
2428	.01	5.795	"	"	2	68.00	<u>68.00</u>
2429	.01	2.815	"	"	2	71.00	71.00
2430	.01	6.179	"	"	4	82.00	82.00
2431	.01	4.510	"	"	2	<u>96.00</u>	96.00







Squash.

Germination Standard 85-90 percent. Date of test, July 20, 1903.

Purity Standard 99 percent. Date of test, Feb. 27, 1904.

Date weighed, July 10, 1903. Range of temperature 78°-92°.

Number of seeds per test 100. Method of test, blotting paper.

Duration of test 14 days.

113.4 grams equal a quarter of a pound. The weights per quarter of pound of squash seemed a little better than that for some other seed. The packets of squash seed contained about 75 to 90 seeds.

Tomato.

Germination Standard 85-95 percent. Date of test, Nov. 4, 1903.

Purity Standard 98 percent. Date of test, March 12, 1904.

Date weighed, July 11, 1903. Range of temperature 58°-91°.

Number of seeds per test 200. Method of test, blotting paper.

Duration of test 14 days.

No. 2533 was received broken, part of the contents being in the sack. Owing to the size of the seed and their sticking together the samples were hard to count.

Tomato

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
2501	New Stone-Henderson	dirt B.seeds
2502	New Stone-Elgin	dirt
2503	New Stone-Barnard	Portions of skin
2504	New Stone-Buckbee	dirt F.seeds
2505	New Stone-Vaughan	B.seeds
2506	Stone-Shumway	dirt
2507	New Stone-Alneer	dirt
2508	Stone-Burpee	dirt
2509	New Stone-Leonard	dirt
2510	New Stone-Martz	dirt chaff
2511	Stone-Ferry (box)	dirt F.seeds
2512	Stone-Landreth(box)	dirt
2513	Stone-Briggs	sand
2514	Livingston's Perfection-Alneer	B.seeds
2515	Elkton-Buckbee	dirt B.seeds
2516	New Early Tree-GreatNorthern	dirt
2517	Acme-Crosman	dirt F.seeds
2518	Acme-May (box)	dirt
2519	Acme-Rice	dirt
2520	Beauty-Forrest	

Tomato

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
2501	.05	3.101	.046	1.48	3	<u>94.50</u>	93.75
2502	.05	2.411	.011	.455	5	<u>92.25</u>	91.75
2503	.05	5.351	.027	.505	5	84.00	83.50
2504	.03	2.861	.033	1.20	8	77.75	76.50
2505	.10	3.401	.025	.794	3	82.00	81.25
2506	.03	4.047	.076	1.91	5	79.25	78.00
2507	.03	2.180	.009	.413	5	76.75	76.25
2508	.05	2.229	.0119	.856	3	<u>96.25</u>	95.50
2509	.05	4.860	.024	.493	5	68.50	68.00
2510	.015	.981	.013	.144	5	69.00	68.75
2511	.05	1.571	00	00	5	<u>87.25</u>	<u>87.25</u>
2512	.05	2.887	.042	1.46	7	53.25	52.50
2513	.05	1.548	.048	3.12	6	61.50	59.00
2514	.02	2.019	.206	.298	5	78.00	77.75
2515	.02	2.426	.032	1.32	5	74.25	72.75
2516	.02	3.471	.066	1.90	2	<u>93.00</u>	92.50
2517	.05	2.211	.021	.654	3	<u>91.75</u>	91.00
2518	.05	2.255	.207	.311	2	<u>97.50</u>	97.00
2519	.05	1.166	.045	3.89	5	58.75	55.50
2520	.016	1.708	00	00	4	<u>88.50</u>	88.50

2-Tomato

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
2521	White's Excelsior-Iowa	dirt
2522	Early Illinois-Great Northern	dirt
2523	Matchless-Missouri Valley	dirt
2524	Hmd's Earliest-Hammond	dirt F.seeds
2525	Dwarf Champion-Graves	dirt
2526	Earliest In The World-Bell	dirt
2527	Peach-Anderson	
2528	Red Trophy-Hammond	chaff
2529	Six Large Smooth Sorts-Templin	chaff
2530	Seven Selected Varities-Mills	dirt
2531	Eleven Finest-Buckbee	dirt F.seeds
2532	Seven Best Kinds-Isbell	dirt F.seeds
2533	Acme-May (order)	dirt
2534	Tomatoe-Bunker Hill	dirt
2535	Stone-Ferry (order)	chaff
2536	Stone-Landreth(order)	chaff radish
2537	Stone-Rothschild's	dirt Radish seed
2538	New Stone-Siegel Cooper	dirt
2539	Acme-Fair	skin radish
2540	New Stone-Boston	dirt

2- Tomato

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. P	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. V	Real Value. $\frac{P \cdot V}{100}$
2521	.05	2.070	.028	1.25	3	72.00	71.00
2522	Trial	1.504	.016	1.1	5	80.50	79.50
25.23	.02	5.729	.038	1.67	3	<u>85.00</u>	<u>83.75</u>
2524	.05	2.493	.023	.923	3	76.00	75.25
2525	.012	1.731	.043	2.49	5	80.00	78.00
2526	.006	1.711	.031	1.81	5	47.00	45.50
2527	.02	5.906	00	00	5	76.75	76.75
2528	.05	3.471	.016	.461	5	<u>93.75</u>	93.25
2529	.02	2.901	.015	.517	5	75.25	75.00
2530	.02	.241	00	00	5	<u>87.00</u>	87.00
2531	.02	2.612	.102	3.91	5	72.25	70.00
2532	.02	2.216	.089	4.02	5	<u>83.50</u>	79.75
2533	.05	1.738	.026	1.51	5	59.50	58.25
2534	.01	.239	00	00	5	67.35	67.35
2535	.05	2.621	.005	.191	3	<u>86.25</u>	86.00
2536	.05	2.921	.009	.308	3	<u>88.50</u>	88.00
2537	.01	1.500	.015	1.0	5	<u>83.75</u>	83.00
2538	.01	1.899	.008	.533	6	<u>86.50</u>	86.00
2539	.01	1.870	.011	.588	5	<u>84.50</u>	84.00
2540	.01	2.036	.008	.394	5	<u>87.75</u>	87.50





Turnip

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
2601	Early Purple-Burroughs	B.seeds
2602	Red Top Strap Leaf-Henderson	B.seeds
2603	Early Purple Top Strap Leaf-Vaughan	B.seeds
2604	Purple Top Strap Leaf-Great Northern	B.seeds
2605	PurpleTop Strap Leaf-Shumway	B.seeds
2606	Purple Top Strap Leaf Flat-Elgin	
2607	Purple Top Strap Leaf-Buckbee	B.seeds
2608	Purple Top Strap Leaf FlatElgin	
2609	Purple Top Strap Leaved-Burpee	dirt
2610	Early Purple Top Strap Leaf-Alneer	B.seeds
2611	Purple Top Strap Leaved-Barnard	B.seeds
2612	Purple Top Strap Leaf-Leon rd	B.seeds
2613	Purple Top Strap Leaf-Templin	
2614	Purple Top Strap Leaf-Hammond	dirt
2615	White Flat Dutch-Hammond	dirt
2616	Purple Top Flats-Missouri Valley	B?seeds
2617	Improved Purple Top-Haskin	dirt B:seeds
2618	Purple Top Globe-Iowa	B.seeds
2619	Early Purple Top Munic's-Alneer	dirt
2620	Sweet German-Forrest	B.seeds

Turnip

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
2601	.06	23.237	.098	.425	2	<u>93.75</u>	93.50
2602	.05	7.240	.051	.707	3	85.25	84.75
2603	.05	16.482	.012	.490	2	<u>95.00</u>	94.50
2604	.03	9.132	.021	.230	2	<u>99.75</u>	99.50
2605	.03	9.435	.022	.233	2	<u>89.50</u>	89.25
2606	.05	3.120	.000	0 000	2	<u>94.75</u>	94.75
2607	.04	1.420	.000	000	2	<u>98.50</u>	98.50
2608	.05	3.030	.000	000	2	<u>94.50</u>	94.50
2609	.05	7.940	.000	000	2	<u>99.00</u>	<u>99.00</u>
2610	.03	5.055	.011	.218	2	<u>98.50</u>	98.25
2611	.05	8.012	.013	.162	2	<u>92.75</u>	92.50
2612	.03	8.440	.047	.557	2	89.25	89.25
2613	.02	11.362	.000	00	2	<u>89.75</u>	89.75
2614	.05	6.810	.012	.176	2	<u>92.50</u>	92.25
2615	.05	7.190	Trace		2	<u>100.00</u>	100.00
2616	.02	3.024	.006	.199	2	82.00	82.00
2617	.01	8.340	.008	.0959	2	83.00	83.00
2618	.05	17.318	.068	.393	2	86.60	86.00
2619	.02	4.218	.032	.760	2	<u>99.00</u>	98.50
2620	.016	7.580	.055	.0712	2	<u>91.75</u>	91.75

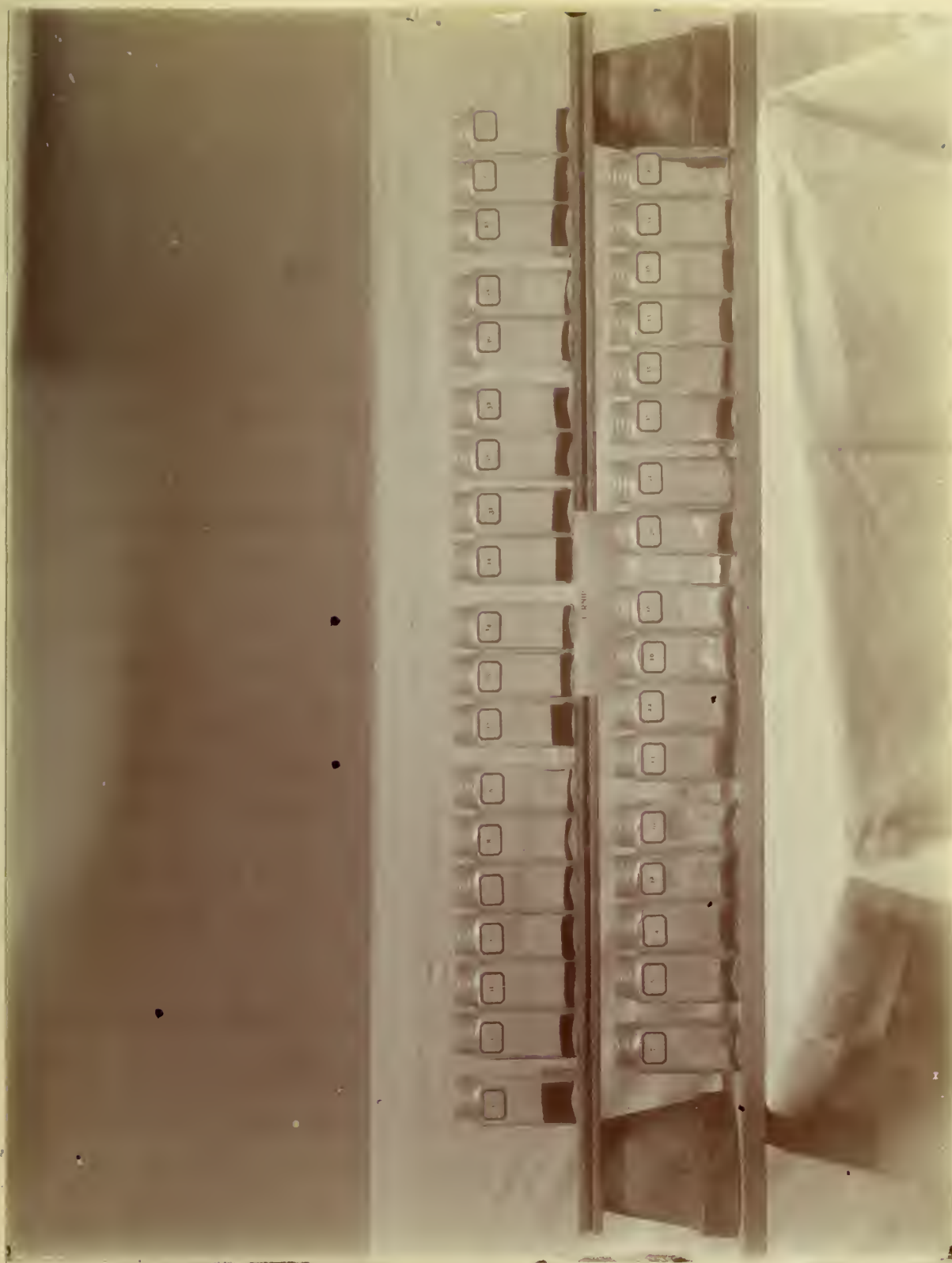
2- Turnip

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
2621	Early Milan-Martz	
2622	Seven Splendid-Buckbee	
2623	Purpoe Top Strap Leaf-riggs	dirt
2624	Early Flat Red Strap Leaf-Landreth (box)	B.seeds
2625	Purple Top Strap Leaf-May (box)	B.seeds
2626	Purple Top Strap Leaf-Crosman	B.seeds
2627	Extra Early Purple Top Milan-Rice	B.seeds F.seeds
2628	Early Purple Top Strap Leaf-Ferry (box)	dirt
2629	Turnip-Bunker Hill	
2630	Purple Top Strap Leaf Flat-May (order)	
2631	Large Early Red Top Globe-Landreth "	B.seeds
2632	Early Purple Top Strap Leaf -Ferry (order)	dirt
2633	Purple Top Strap Leaf-Boston	B.seeds
2634	Purple Top Strap Leaved-Fair	
2635	Purple Top Strap Leaved-Siegel Cooper	B.seeds
2636	Putple Top Strap Leaved-Rothschild's	

2- Turnip

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. P	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. V	Real Value. $\frac{P \cdot V}{100}$
2621	.015	1.110	.002	.180	2	<u>92.25</u>	92.00
2622	.02	5.458	000	000	3	79.50	79.50
2623	.05	11.815	.045	.303	2	<u>89.50</u>	89.25
2624	.05	12.080	.010	.11	2	<u>96.25</u>	96.00
2625	.05	1.272	.009	.709	2	83.76	83.50
2626	.05	10.930	.06	.551	3	39.75	39.50
2627	.05	8.796	.177	2.01	3	52.75	51.50
2628	.05	11.945	.012	.039	2	<u>97.75</u>	97.50
2629	.01	.625	000	000	9	17.50	17.50
2630	.05	6.480	000	000	2	<u>97.50</u>	97.50
2631	.05	11.938	.006	.504	2	<u>95.50</u>	95.25
2632	.05	10.022	.017	1.56	2	<u>99.25</u>	98.00
2633	.01	5.205	.003	.057	2	<u>93.25</u>	93.00
2634	.01	2.140	000	000	2	68.50	68.50
2635	.01	5.438	000	000	3	71.00	71.00
2636	.01	4.94	000	000	3	64.00	64.00







Turnip.

Germination Standard 90-95 percent. Date of test, Nov. 4, 1903.

Purity Standard 99 percent. Date of test, March 19, 1904.

Date weighed, July 11, 1903. Range of temperature 58°-90°.

Number of seeds per test 200. Method of testing, blotting paper.

Duration of test 14 days.

Samples Nos. 2606, 2608, 2609, 2622, 2630, 2634, and 2636 were all insect eaten. Sample No. 2627 contained quite a number of round black seed (30). A few of the samples moulded during the test.

Ruta Baga.

Germination Standard 90-95 percent. Date of test, Oct. 22, 1903.

Purity Standard 99 percent. Date of test, April 1, 1904.

Date weighed, July 11, 1903. Range of temperature 62°-90°.

Number of seeds per test 200. Method of testing, blotting paper.

Duration of test 11 days.

No. 2706 sprouts were very weak. Eight samples moulded along towards the test. Most all of the seeds germinated in two days.

Ruta Baga

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
2701	Improved American Purple Top-Henderson	B.seeds
2702	Vaughan's Improved-Vaughan	B.seeds
2703	Shirving's Purple Top-Elgin	B.seeds
2704	Shirving's Purple Top-Elgin	B.seeds
2705	Improved Purple Top-Burpee	B.seeds
2706	Improved Purple Top-Ferry (box)	B.seeds
2707	American Purple Top-Barnard	B.seeds
2708	Imp. American Yellow Purple Top-Alneer	B.seeds
2709	Purple Top-Leonard	B.seeds
2710	Shirving's Imp. Purple Top-Crosman	B.seeds dirt
2711	Shirving's Imp. Purple Top-Rice	B.seeds
2712	Shirving's Improved Purple Top-Briggs	B.seeds dirt
2713	Purple Top-Hammond	B.seeds
2714	Shirving's-Shunway	B.seeds
2715	Purple Top-Buckbee	B.seeds
2716	Mixed-Great Northern	B.seeds
2717	Improved Purple Top-Ferry (order)	B.seeds
2718	Shirving's Purple Top-Rothschild's	B.seeds
2719	Shirving's Purple Top-Boston	B.seeds
2720	Shirving's Purple Top-Siegel Cooper	B.seeds

Ruta-Baga

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. P	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. V	Real Value. $\frac{P \cdot V}{100}$
2701	.05	9.176	.047	.512	2	74.75	74.25
2702	.05	8.961	.074	.827	2	<u>97.75</u>	97.00
2703	.05	1.669	.006	.362	2	88.25	88.00
2704	.05	3.066	.025	.820	2	84.00	83.25
2705	.05	7.532	.023	.306	2	<u>95.50</u>	95.00
2706	.05	5.975	.026	.436	2	<u>95.25</u>	95.00
2707	.05	6.221	.043	.724	2	94.75	94.00
2708	.03	4.733	.039	.825	2	<u>94.75</u>	94.00
2709	.05	9.121	.038	.416	2	<u>98.50</u>	98.00
2710	.05	9.461	.077	.740	2	77.00	76.25
2711	.05	9.672	.014	.145	2	65.25	65.00
2712	.05	12.621	.061	.484	9	1.50	1.00
2713	.05	6.836	.094	1.38	2	<u>8.50</u>	8.00
2714	.03	4.821	.048	.996	2	75.00	74.00
2715	.03	6.601	.018	.273	2	<u>97.50</u>	97.25
2716	.04	4.11	.021	.476	4	32.25	32.00
2717	.05	10.596	.028	.267	2	<u>98.50</u>	98.25
2718	.01	5.211	.024	2.29	2	36.00	34.50
2719	.01	4.702	.036	.767	4	24.50	23.75
2720	.01	5.183	.053	1.1	4	1.75	1.00

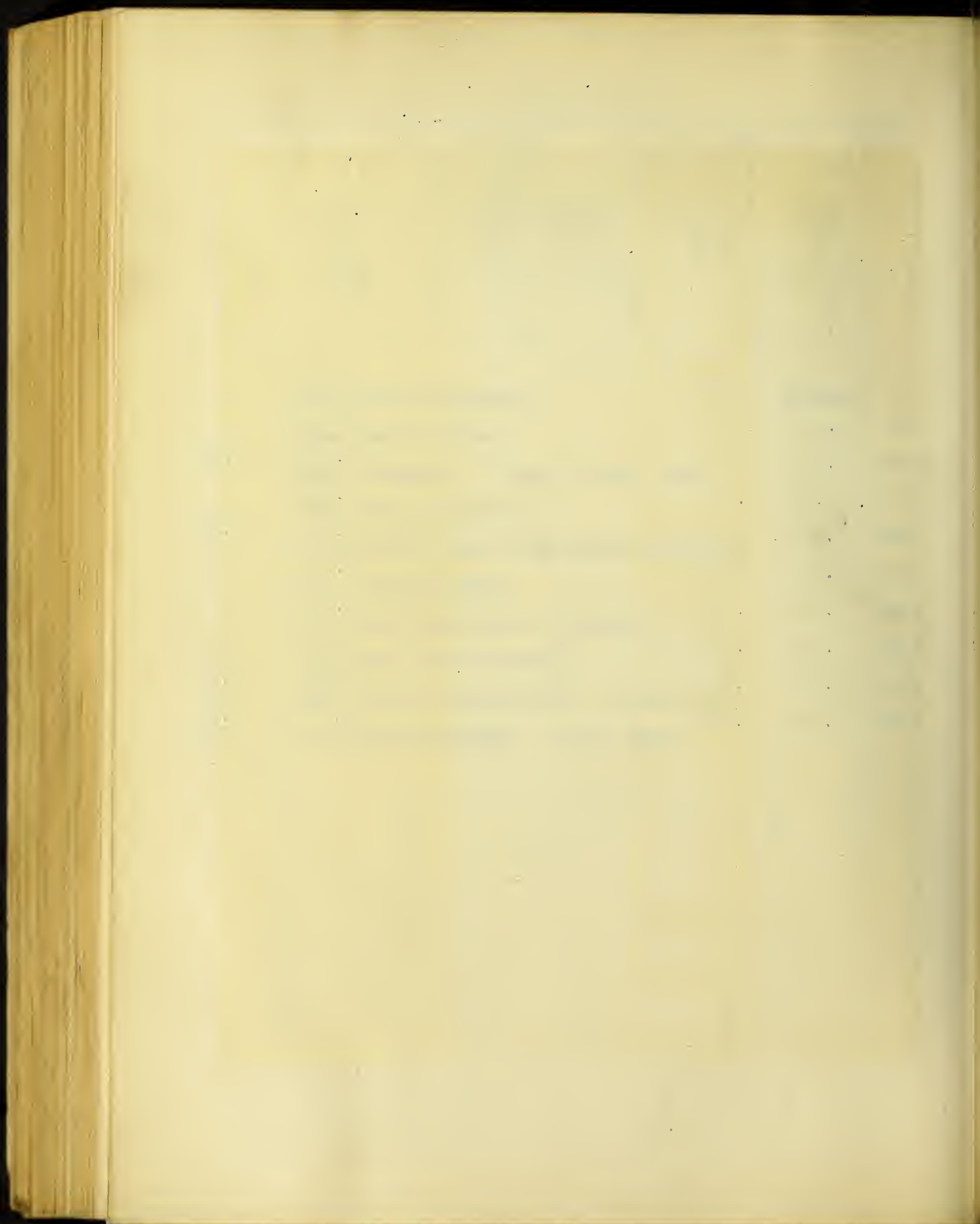


Water Cress.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
2801	Water Cress-Henderson,	No test.
2802	Water Cress-Burpee,	"
2803	Water -Leonard, Seed of large size.	"
2804	Water Cress-Barnard,	"
2805	Double Curled Water Cress-Elgin Seed Co.,	"
2806	Water Cress-Vaughan,	"
2809	True Water Cress-Great Northern,	"
2810	True Water Cress-Buckbee,	"
2811	Extra Curled Cress-Alneer, Large seed.	"
2812	Curled Cress-Shumway, Large seed.	"

Water Cress.

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
2801	.10	5.106			0	0.00	
2802	.10	1.571			0	0.00	
2803	.05	9.931			2	<u>95.50</u>	95.50
2804	.10	1.831			0	0.00	
2805	.05	2.030			2	<u>96.50</u>	96.50
2806	.10	2.191			0	0.00	
2809	.02	.586			0	0.00	
2810	.05	.963			0	0.00	
2811	.02	4.354			2	<u>92.75</u>	92.75
2812	.02	5.013			1	<u>99.75</u>	99.75







Cress.

Germination Standard 85-90 percent. Date of test, July 21, 1903.

Purity Standard 99npercent. Date of test, none made.

Date weighed, June 19, 1903. Range of temperature 72°-96°.

Number of seeds 200. Method of testing, blotting paper.

Duration of test 21 days.

Samples Nos. 2801, 2802, 2804, 2806, 2809, 2810 did not germinate at all. These were very fine seed. Samples Nos. 2803, 2805, 2811, 2812 gave good germination and were large seed.

Desiring to know why the water cress seed varied so in size, samples 2801 representing the smaller seed and 2803 the larger seed were sent to Edgar Brown in charge of the seed laboratory of the United States Department of Agriculture. Under date of April 5, 1904 he states:

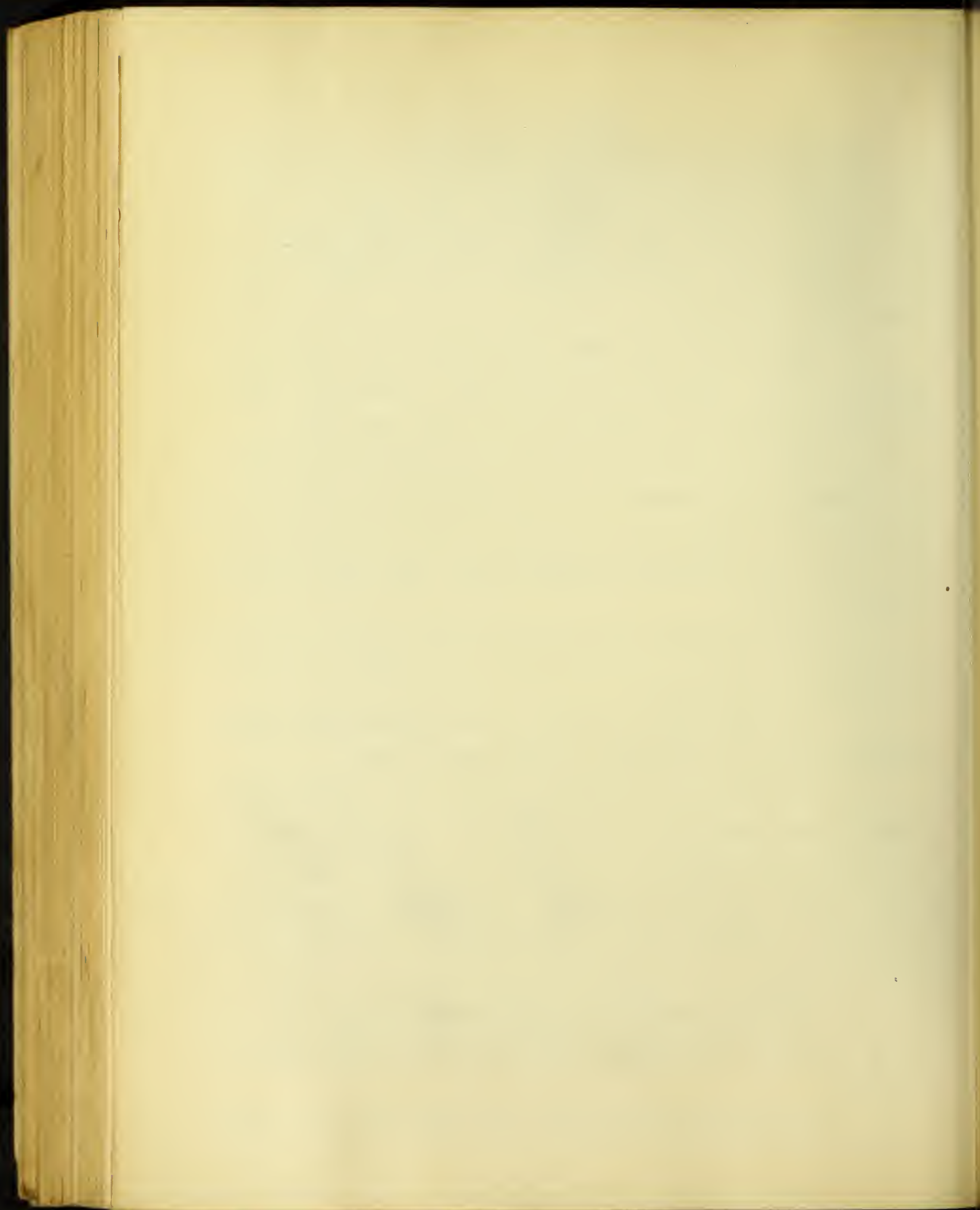
"Your letter of February 29 inclosing samples marked Nos. 2801 and 2803 is received.

"The seed marked No. 2801 is that of *Roripa nasturtium*, formerly *Nasturtium officinale*, a common water cress.

"Of course, it is difficult to say why the seed represented by this sample did not germinate, but it is quite probable that water cress seed will not germinate after it has been thoroughly dried. This is the case with a considerable number of aquatic plants, the seed of which ripens naturally and falls into the water at once.

"The seed represented by sample number 2803 is that of *Lepidium sativum*, Golden peppergrass, which is commonly grown in gardens."

This probably explains why these seed did not do better for us.



Class I. .

I l l i n o i s S e e d s m e n .

Alneer Bros., Rockford, Illinois. \$1.83.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
5	Bean - Burpee's Stringless Greenpod	
110	Bean - Burpee's Bush Lima	
206	Beet - Early Eclipse	B.seed chaff
316	Cabbage - Select Premium Flat Dutch	B.seed
410	Carrot - Oxheart	chaff dirt
514	Cauliflower - Henderson's Early Snowball	
622	Celery - Henderson's White Plum	chaff F.seed
701	Corn - Stowell's Evergreen	B.seed chaff
808	Cucumber - Improved Early White Spine	
910	Eggplant - New York Improved	B.seed
1002	Endive - Green Curled	sand
1102	Kohl-Rabi - Early White Vienna	
1204	Lettuce - Improved Hanson	dirt
1303	Muskmelon - Rocky Ford	stone pulp
1402	Watermelon - Kolb's Gem	B.seed pulp
1502	Onion - Large Wether's field	
1609	Parsley - Double Moss Curled	chaff
1711	Parsnip - Hollow Crowned	chaff dirt
1805	Pea - Heroine	B.seed
1914	Pepper - Large Bell	dirt
2011	Pumpkin - Small Sugar	B.seed F.seed

Alneer Bros, Rockford, Illinois. \$1.83

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
5	.12	160.00	.098	.061	2	65.00	65.00
110	.12	162.00	.000	.000	6	1.00	1.00
206	.03	6.003	.032	.53	4	148.00	147.90
316	.04	3.508	.020	.591	2	63.50	63.00
410	.03	5.500	.006	1.09	4	57.25	56.63
514	.10	.990	.000	.000	2	<u>87.30</u>	87.30
622	.04	2.320	.005	.216	11	<u>72.25</u>	72.00
701	.08	109.700	2.90	2.66	4	80.00	77.80
808	.05	5.462	.000	.000	2	<u>97.50</u>	97.50
910	.04	1.193	.014	.018	5	32.50	32.00
1002	.03	2.319	.0023	.990	2	82.25	82.00
1102	.04	4.479	.000	.000	2	69.50	69.50
1204	.04	3.061	.013	.533	2	<u>95.35</u>	95.00
1303	.04	5.420	.257	.474	3	75.50	72.00
1402	.18	104.00	.669	.643	3	69.50	69.00
1502	.04	4.012	.000	.000	5	61.25	61.25
1609	.03	3.446	.005	.145	10	67.00	67.00
1711	.03	3.345	.010	3.00	10	63.00	61.25
1805	.10	152.00	1.000	1.52	7	88.00	87.45
1914	.04	2.817	.100	.281	10	43.50	43.25
2011	.20	110.00	.740	.673	3	<u>37.00</u>	36.41

2- Alneer Bros., Rockford, Illinois.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
2102	Radish - Improved Chartier	B.seed dirt
2202	Salsify - Mammoth Sandwich Island	dirt
2303	Spinach - Long Standing	dirt
2402	Squash - Giant Golden Summer Crookneck	B.seed
2507	Tomato - New Stone	dirt
2610	Turnip - Early Purple Top Strap Leaf	B.seed
2708	Ruta Baga - Improved American Yellow Purple Top	B.seed
2811	Cress - Curled	No test

2- Ameer Bros., Rockford, Illinois.

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
2102	.04	7.396	.196	2 .29	2	87.00	85.00
2202	.104	3.223	.140	.435	7	<u>84.00</u>	83.50
2303	.02	6.758	.153	2.27	4	<u>83.50</u>	81.00
2402	.18	110.00	.932	.947	2	<u>98.00</u>	97.50
2507	.03	2.130	.009	.413	5	76.75	76.25
2610	.03	5.055	.011	.218	2	<u>98.50</u>	98.25
2708	.03	4.733	.039	.825	2	<u>94.75</u>	94.00
2811	.02	4.354	.000	.000	2	<u>92.75</u>	92.75

W. W. Barnard & Co., Chicago, Illinois. \$1.90.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
11	Bean - Stringless Green Pod	B.seed
106	Bean - Burpee's Bush Lima	
202	Beet - Eclipse	B.seed chaff
327	Cabbage - Early Jersey Wakefield	B.seed
417	Carrot - Ox Heart	chaff stone
508	Cauliflower - Early Snowball	B.seed
621	Celery - White Plume	dirt
708	Corn - Stowell's Evergreen	dirt B.seed
805	Cucumber - Evergreen White Spine	
912	Eggplant - New York Purple	B.seed F.seed
1010	Endive - Moss Curled	dirt F.seed
1103	Kohl-Rabi - Early White Vienna	B.seed dirt
1210	Lettuce - Hanson	dirt chaff
1202	Muskmelon - Rocky Ford	
1409	Watermelon - Kolb's Gem	B.seed F.seed
1501	Onion - Early Wethersfield	
1601	Parsley - Moss Curled	chaff dirt
1703	Parsnip - Hollow Crown	chaff
1807	Pea - Heroine	dirt F.seed
1913	Pepper - Bell	B.seed
2009	Pumpkin - Sugar	B.seed chaff

W.W.Barnard & Co., Chicago, Illinois.

\$1.90

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
11	.10	241.00	.652	.270	2	<u>91.00</u>	90.74
106	.10	243.00	.000	.000	11	8.00	8.00
202	.05	7.560	.153	.209	4	145.50	145.20
327	.05	6.503	.020	.308	2	82.50	82.25
417	.05	11.270	.175	1.550	4	72.75	71.86
503	.10	.967	.007	.724	2	72.000	71.50
621	.05	6.254	.034	.544	11	54.25	53.90
703	.10	147.50	1.078	.735	4	72.00	71.50
805	.05	7.792	.000	.000	2	<u>87.00</u>	87.00
912	.05	5.756	.040	.674	8	53.00	57.50
1010	.05	4.713	.004	.86	4	76.50	76.00
1103	.05	8.441	.038	.045	2	84.50	84.25
1210	.05	6.951	.095	1.37	4	<u>95.75</u>	95.50
1302	.05	10.020	.000	.000	4	54.50	54.50
1409	.20	114.50	.245	.213	2	<u>86.50</u>	86.25
1501	.055	5.145	.000	.000	4	<u>82.75</u>	82.75
1601	.03	6.831	.044	.205	10	44.25	44.00
1703	.03	8.025	.094	1.17	7	67.75	67.20
1807	.10	223.40	.779	.349	7	<u>93.00</u>	92.75
1913	.05	5.794	.098	1.63	3	59.00	58.50
2009	.20	113.00	.164	.145	3	<u>83.50</u>	88.37

W. W. Barnard & Co., Chicago, Illinois.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
2106	Radish - Chartiers	B.seed dirt
2206	Salsify - Mammoth Sandwich Island	dirt
2302	Spinach - Long Standing	dirt
2403	Squash - Summer Golden Crookneck	B.seed
2503	Tomato - New Stone	portions of skin
2611	Turnip - Purple Top Strap Leaved	B.seed
2707	Ruta Baga - American Purple Top	B.seed
2804	Water Cress -	no test

2- W.W.Barnard & CO. Chicago, Illinois.

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
2106	.05	9.474	.130	1.37	2	<u>92.50</u>	92.50
2206	.05	5.870	.043	.732	7	46.00	45.25
2302	.05	27.145	.287	1.10	4	74.00	73.50
2403	.25	114.00	.324	.284	2	<u>98.50</u>	98.25
2503	.05	5.351	.027	.505	5	84.00	83.50
2611	.05	8.012	.013	.162	2	<u>92.75</u>	92.50
2707	.05	6.220	.043	.724	2	<u>94.75</u>	94.00
2804	.10	1.331			0	00.00	

H. W. Buckbee, Rockford, Illinois. \$2.00. No 37907

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
9	Bean - New Stringless Green Pod	B.seed
108	Bean - Burpee's Bush Lima	
210	Beet - New Early Eclipse	B.seed chaff
301	Cabbage - True Early Jersey Wakefield	sand
416	Carrot - Ox Heart	chaff
503	Cauliflower - Henderson's True Early Snowball	dirt
603	Celery - White Plum Self Blanching	chaff F.seed
710	Corn - Stowell's Ever Green	B.seed
804	Cucumber - Monarch White Spine	
916	Eggplant - Large New York Purple	B.seed dust
1005	Endive - Fine Green Curled	chaff dirt
1107	Kohl-Rabi - Early White Vienna	B.seed sand
1211	Lettuce - Improved Hanson	dirt
1307	Musk-melon - Famous Rocky Ford	dried pulp
1403	Water Melon - Perfected Kolb's Gem	B.seed pulp
1506	Onion - Red Wethersfield	
1611	Parsley - New Moss Curled	chaff dirt
1707	Parsnip - Improved Hollow Crown	chaff
1809	Pea - New Hercine	
1912	Pepper - Large Bell	dirt
2002	Pumpkin - True Sugar Pie	B.seed chaff

H.W. Buckbee, Rockford, Illinois.

\$2.00

Mar 13, 1903

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. P	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. V	Real Value. $\frac{P \cdot V}{100}$
9	.12	171.00	1.915	1.15	4	<u>91.00</u>	90.10
108	.12	139.00	.000	.00	11	4.175	4.175
210	.05	7.580	.156	2.06	4	<u>147.00</u>	144.00
301	.05	3.142	.004	.115	4	64.50	64.50
416	.05	7.277	.080	1.10	4	60.50	59.25
503	.10	1.560	.005	.321	2	<u>94.00</u>	94.00
603	.04	4.183	.019	.454	14	<u>61.75</u>	61.75
710	.10	122.1	1.372	1.12	4	74.00	73.20
804	.05	8.113	.000	.00	4	54.50	54.50
916	.04	2.108	.032	.151	8	12.00	12.00
1005	.03	4.176	.113	2.71	2	83.25	85.90
1107	.04	2.793	.017	.06	2	<u>94.00</u>	93.50
1211	.03	3.481	.017	4.88	2	<u>85.75</u>	81.50
1307	.04	6.422	.049	.76	3	<u>98.50</u>	97.80
1403	.18	108.00	.215	1197	4	22.50	22.25
1506	.04	4.248	.000	.000	6	68.25	68.25
1611	.03	3.766	.007	.186	10	64.50	64.00
1707	.03	5.408	.005	.092	8	64.00	63.94
1809	.12	167.00	.00	.000	7	76.00	76.00
1912	.03	3.632	.020	.550	5	<u>85.00</u>	84.50
2002	.20	101.00	.469	.46	3	63.50	63.00

2 - H. W. Buckbee, Rockford, Illinois.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
2105	Radish - Improved Chartier	B. seed dirt
2214	Salsify - Mammoth Sandwich Island	B.seed dirt
2310	Spinach - Long Standing	B.seed
2403	Squash - Giant White Summer Crookneck	B.seed dirt
2504	Tomato - New Stone	F.seed dirt
2607	Turnip - Purple Top Strap Leaf	B.seed
2715	Ruta Baga - Purple Top	B.seed
2810	Cress - True Water	

2- H.W.Buckbee, Rockford, Illinois.

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
2105	.04	7.201	.270	3 .84	2	39.50	39.50
2214	.04	5.645	.104	1.84	7	65.50	64.25
2310	.05	10.905	.013	.019	5	80.50	80.25
2408	.25	113.00	1.857	1.64	4	<u>33.00</u>	87.50
2504	.03	2.361	.033	.20	8	77.75	76.50
2607	.04	1.425	.000	.00	2	<u>93.50</u>	98.50
2715	.03	6.601	.018	.273	2	<u>97.50</u>	97.25
2810	.05	.963	-----	---	0	0.00	

Burroughs Bros. - El Paso, Illinois. \$.60

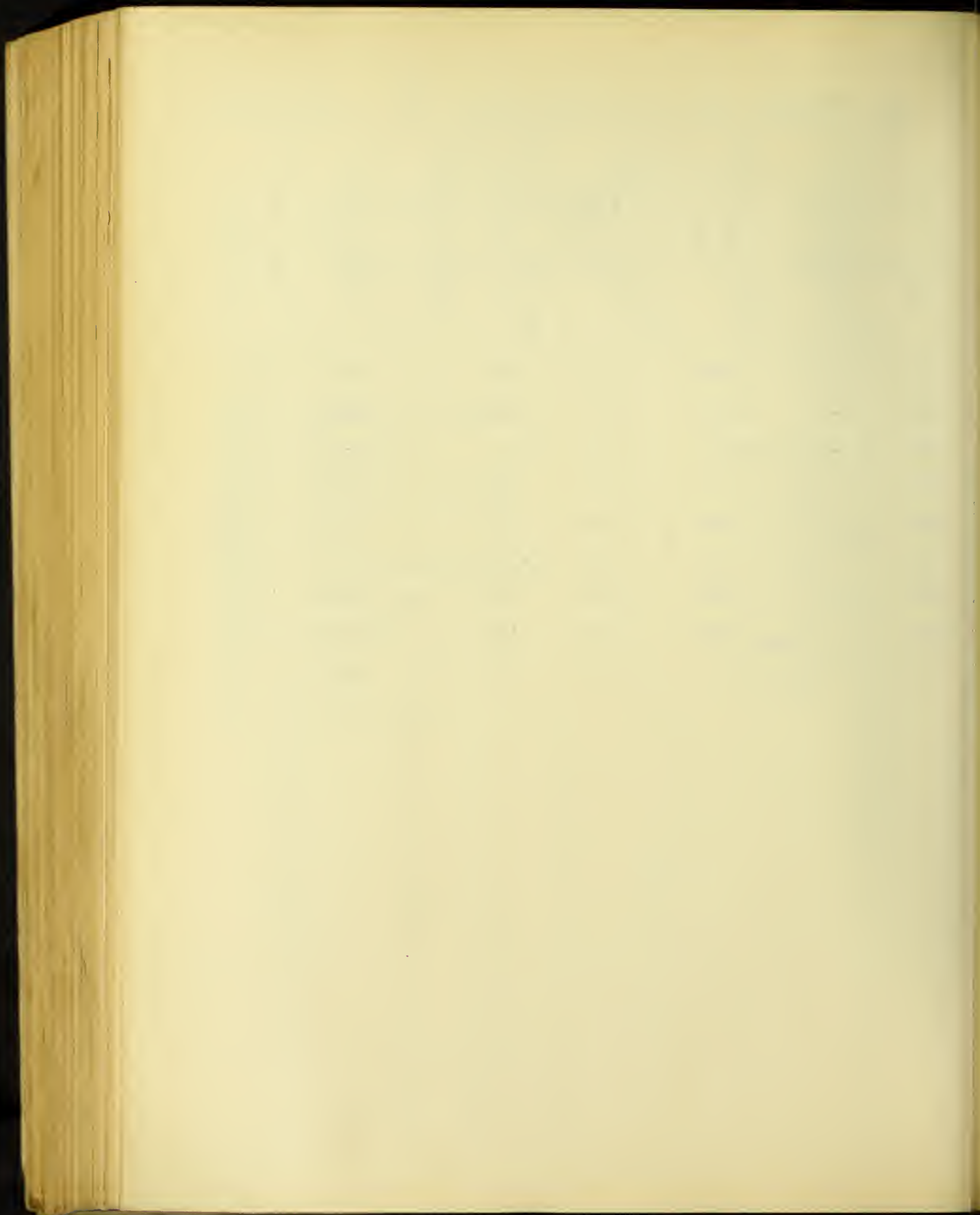
Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
321	Early Jersey Wakefield	
618	White Plume	chaff
707	Stowell's Evergreen	B. seed
1208	Hanson	chaff dirt
1511	Large Red Wethersfield	B. seed
1709	Hollow Crown	chaff dirt
1917	Bull Nose	chaff dirt
2601	Turnip	b, seed
111	D. White Sin.	

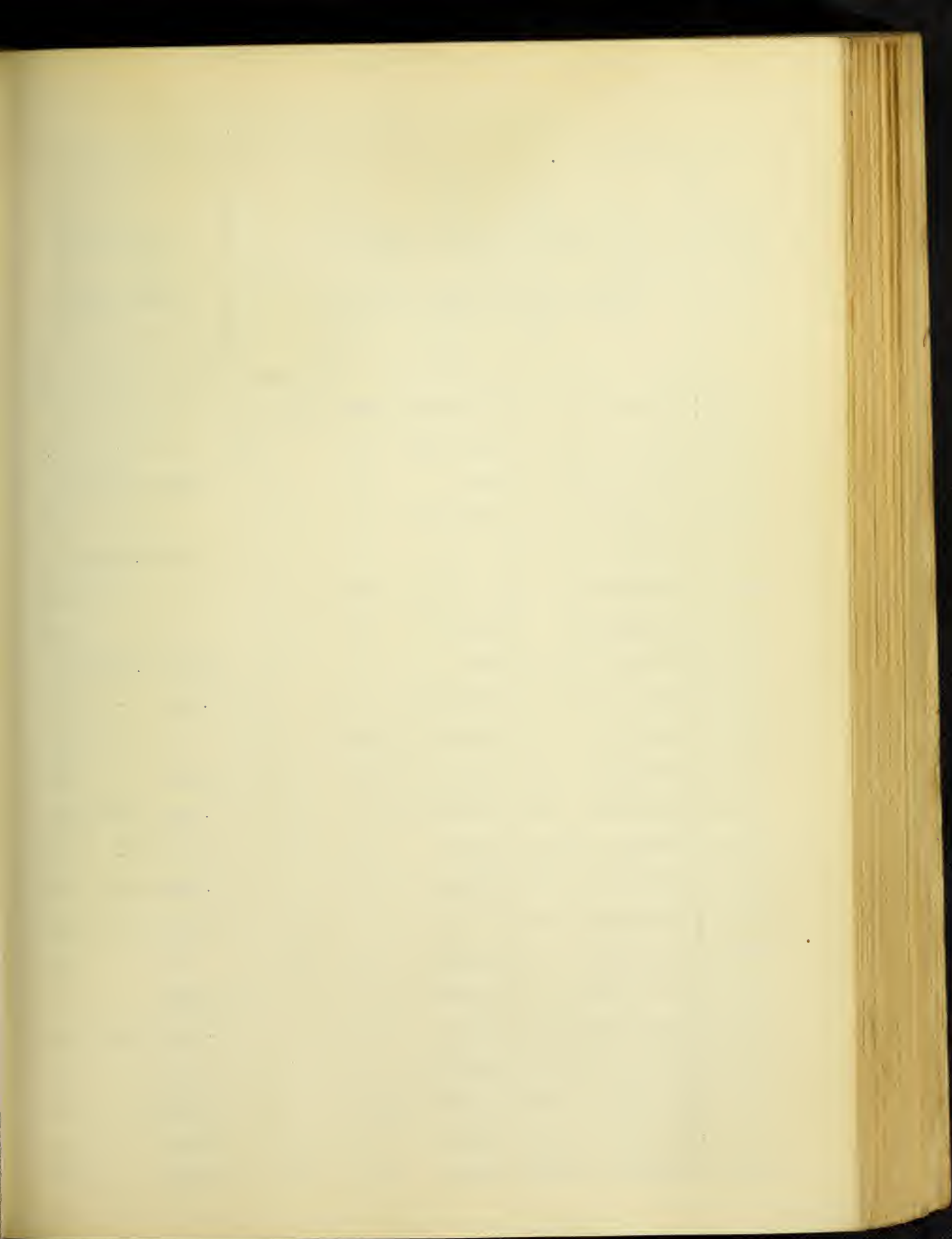
Burroughs Bros. El Paso, Illinois.

\$.60

March 10, 1903.

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
321	.06	4.339	.000	.000	2	64.00	64.00
618	.06	6.115	.021	.344	21	<u>88.75</u>	88.50
707	.06	46.00	.387	8.41	4	41.00	37.60
1208	.06	6.711	.037	.551	2	82.75	82.50
1511	.06	6.852	.004	.534	6	47.00	46.50
1709	.06	3.560	.324	3.78	10	68.50	66.00
1917	.06	6.640	.020	.301	5	<u>76.50</u>	76.00
2601	.06	23.237	.098	.425	2	<u>93.75</u>	93.50
111	.42	76.50	.000	.000	6	2.00	2.00





Elgin Seed Co., Elgin, Illinois. \$2.60.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
12	Bean - Burpee's Stringless Green Pod	
116	Bean - Burpee's Bush Lima	
203	Beet - Early Eclipse	B.seed chaff
329	Cabbage - Jersey Wakefield	
413	Carrot - Ox Heart	chaff F.seed
504	Cauliflower - Erfurt Early Dwarf	
505	Cauliflower - Snowball	
616	Celery - White Plume	chaff F.seed
711	Corn - Stowell's Evergreen	B.seed
806	Cucumber - Improved White Spine	
807	Cucumber - Improved White Spine	chaff
908	Egg Plant - New York Improved	B.seed stone
1006	Endive - Thick Leaved	dirt chaff
1106	Kohl-Rabi - White Vienna	B.seed sand
1205	Lettuce - Hanson	chaff cinders
1306	Musk Melon - Rocky Ford	
1408	Water Melon - Kolb's Gem	B.seed
1508	Onion Red Wethersfield	B.seed stone
1509	Onion - Red Wethersfield	
1608	Parsley - Champion Moss Curled	chaff dirt
1704	Parsnip - Hollow Crown	chaff
1708	Parsnip - Hollow Crown	chaff

Elgin Seed CO. Elgin, Illinois.

#2.60

March 11, 1903

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. P	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. V	Real Value. $\frac{P \cdot V}{100}$
12	.18	253.80	.000	.000	4	89.00	89.00
116	.18	253.00	.000	.000	11	10.00	10.00
203	.05	3.613	.009	.25	4	<u>155.00</u>	154.90
329	.05	5.589	.000	.00	2	84.00	84.00
413	.05	1.755	.065	3.70	7	53.00	51.00
504	.10	.185	.000	.000	soil	73.00	73.00
505	.20	.337	.000	.000	"	<u>90.00</u>	80.00
616	.05	1.254	.010	.125	14	57.75	57.50
711	.10	193.00	2.495	1.29	4	59.50	59.00
806	.10	4.798	.000	.000	2	84.50	84.50
807	.10	4.456	.015	.337	2	77.50	77.00
908	.05	6.133	.057	.93	5	51.00	50.75
1006	.05	1.378	.113	6.91	3	26.65	24.30
1106	.05	5.083	.006	.0289	2	43.00	42.50
1205	.05	1.326	.015	1.14	3	<u>93.75</u>	91.70
1306	.05	4.945	.000	.000	3	<u>91.50</u>	91.50
1408	.25	109.20	.060	.055	3	77.00	77.00
1508	.05	1.84	.005	.272	6	42.20	42.00
1509	.05	2.05	.000	.000	6	48.00	48.00
1608	.05	2.271	.008	.353	11	43.25	42.00
1704	.05	1.840	.000	.000	7	15.75	15.75
1708	.05	1.340	.003	.22	8	13.50	12.97

2 - Elgin Seed Co., Elgin, Illinois.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
1811	Pea - Heroine	B.seed
1902	Pepper - Bell	B.seed dirt
2004	Pumpkin - Sugar	B.seed
2005	Pumpkin - Sugar	
2107	Radish - Chartier	B.seed
2213	Salsify - Mammoth Sandwich Island	B.seed dirt
2311	Spinach - Long Standing	B.seed
2406	Squash - Summer Crookneck	B.seed dirt
2502	Tomato - New Stone	dirt
2606	Turnip - Purple Top Strap Leaf Flat	
2702	Ruta-Baga - Shirving's Purple Top	B.seed
2704	Ruta-Baga - Shirving's Purple Top	B.seed
2805	Cress - Double Curled Water (large seed)	

2- Elgin Seed Co. Elgin, Ill. ois.

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. P	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. V	Real Value. $\frac{P \cdot V}{100}$
1811	.12	277.50	2.668	.967	7	85.00	84.50
1902	.05	3.104	1.49	4.81	7	43.00	41.00
2004	.05	2.52	.058	.231	3	<u>94.70</u>	94.00
2005	.05	2.841	.000	.000	3	63.60	63.60
2107	.05	11.223	.293	2.61	2	<u>95.75</u>	93.50
2213	.05	2.000	.040	2.00	7	60.00	58.00
2311	.05	3.29	.006	.132	5	67.00	66.75
2406	.25	116.00	.245	.213	3	<u>93.00</u>	92.75
2502	.05	2.411	.011	.455	5	<u>92.25</u>	91.75
2606	.05	3.120	.000	.000	2	<u>94.75</u>	94.75
2703	.05	1.669	.006	.362	2	88.25	88.00
2704	.05	3.066	.025	.820	2	84.00	83.25
2805	.05	2.030	----	---	2	<u>96.50</u>	96.50

Great Northern Seed Co., Rockford, Illinois. \$2.04.

No 24602

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
10	Bean - New Stringless Green Pod	B.seed
112	Bean - Burpee's Bush Lima	B.seed
227	Beet - Best of All	B.seed stone
326	Cabbage - Early Jersey Wakefield	
412	Carrot - Ox Heart	chaff
502	Cauliflower - Early Snowball	
606	Celery - White Plume	chaff F.seed
712	Corn - Stowell's Ever Green	B.seed
803	Cucumber - Monarch White Spine	
906	Egg Plant - Improved New Large Purple	F.seed wood
1008	Parsley - New Moss Curled	chaff
1110	Kohl-Rabi - Best Vienna	B.seed stone
1221	Lettuce - New Iceberg	
1308	Musk Melon - Rocky Ford	
1404	Water Melon - Kolb's Gem	B.seed pulp
1507	Onion - Red Wethersfield	B.seed
1606	Parsley - New Moss Curled	chaff dirt
1706	Parsnip - New Sugar	dirt chaff
1810	Pea - New Heroine	B.seed
1905	Pepper - Large Bell	B.seed
2003	Pumpkin - Sugar or Pie	B.seed

Great Northern Seed CO., Rockford, Illinois. \$2.04 Mar. 20 1903

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. P	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. V	Real Value. $\frac{P \cdot V}{100}$
10	.12	215.00	2.165	1.10	4	60.00	59.39
112	.14	226.00	2.165	.973	11	15.00	14.85
227	.05	6.180	.305	4.94	4	<u>136.00</u>	176.00
326	.04	3.314	.000	.00	5	37.50	37.50
412	.04	7.330	.095	1.23	4	56.50	55.31
502	.08	1.210	.000	.00	2	<u>83.00</u>	83.00
606	.04	4.715	.034	0.909	11	<u>78.00</u>	77.50
712	.12	219.00	2.622	1.19	4	59.00	58.00
803	.05	7.504	.000	.000	2	<u>99.50</u>	99.50
906	.04	2.616	.065	.0256	5	48.00	46.30
1008	.04	2.346	.005	.342	2	75.00	74.75
1110	.04	2.274	.040	.017	2	<u>91.00</u>	90.50
1221	.04	3.576	.000	.00	3	75.00	75.00
1308	.04	6.520	.000	.000	3	<u>99.00</u>	99.00
1404	.15	107.50	.12	.111	3	72.50	72.00
1507	.05	3.520	.0044	.114	5	19.00	18.75
1606	.04	4.164	.012	.289	11	9.75	9.50
1706	.05	5.617	.110	1.17	12	2.00	2.96
1810	.12	219.40	1.46	.667	7	56.00	55.50
1905	.03	3.350	.005	.130	7	<u>83.00</u>	83.00
2003	.18	104.20	.319	.314	3	<u>97.00</u>	96.69

2 - Great Northern Seed Co., Rockford, Illinois.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
2110	Radish - Chartier	B.seed
2208	Salsify - New Hammoth	B.seed dirt
2308	Spinach - All Seasons	dirt B.seed
2410	Squash - New Giant Summer Crockneck	B.seed
2516	Tomato - New Early Tree	dirt
2604	Turnip - Purple Top Strap Leaf	B.seed
2716	Ruta Baga - Mixed	B.seed
2809	Cress - True Water	no test

2- Great Northern Seed Co., Rockford, Illinois.

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. _P	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. _V	Real Value. $\frac{P \cdot V}{100}$
2110	.04	8.823	.075	.850	2	<u>93.75</u>	93.00
2208	.05	5.093	.104	2.00	7	<u>80.50</u>	78.50
2308	.04	11.365	.154	.436	6	52.00	52.74
2410	.20	108.50	.947	.876	6	47.50	46.75
2516	.02	3.471	.066	1.90	2	<u>93.00</u>	92.50
2604	.03	9.132	.021	.230	2	<u>99.75</u>	99.50
2716	.04	4.411	.021	.476	4	73.25	32.00
2809	.02	.886	---	---	0	00.00	

S. F. Leonard, Chicago, Illinois. \$2.13.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
8	Bean - Stringless Green Pod	B.seed
107	Bean - Burpee's Bush Lima	B.seed
207	Beet - Early Eclipse	B.seed chaff
328	Cabbage - Jersey Wakefield	B.seed
411	Carrot - Ox Heart	chaff dirt
501	Cauliflower - Early Snowball	dirt
620	Celery - WhitePlume	dirt
709	Corn - Stowell's Ever Green	B.seed
810	Cucumber - Evergreen White Spine	
901	Egg Plant - New York Purple	
1004	Endive - Green Curled	dirt F.seed
1104	Kohl-Rabi - White Vienna	
1105	Kohl-Rabi - White Vienna	
1209	Lettuce - Hanson	chaff dirt
1304	Musk Melon - Rocky Ford	B.seed
1405	Water Melon - Kolb's Gem	pulp B.seed
1510	Onion - Red Wethersfield	B.seed stone
1615	Parsley - Champion Moss Curled	dirt
1701	Parsnip - Hollow Crown	chaff
1802	Pea - Heroine	B.seed
1915	Pepper - Large Bell	B.seed

S. F. Leonard Chicago, Illinois.

12.13

Mar 16, 1903

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. P	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. V	Real Value. $\frac{P \cdot V}{100}$
8	.10	249.00	.810	.325	4	<u>93.00</u>	92.70
107	.15	271.00	3.940	3.47	6	2.18	2 .10
207	.03	17.848	.711	3.90	4	120.00	115.00
328	.05	54448	.031	.569	2	89.00	89.00
411	.05	7.924	.110	1.39	4	72.25	70.99
501	.15	1.452	.017	1.17	4	70.00	69.60
620	.05	3.357	.028	.806	11	<u>35.75</u>	85.00
709	.12	207.10	.945	.456	4	73.50	73.25
810	.05	3.357	.000	.000	2	47.00	47.00
901	.05	3.955	.000	.00	5	27.00	27.00
1004	.05	8.326	.032	.979	2	83.50	83.00
1104	.05	2.201	.000	.000	2	<u>35.50</u>	85.50
1105	.05	2.262	.000	.000	2	79.50	79.50
1209	.03	2.076	.065	.413	2	<u>100.00</u>	96.96
1304	.05	7.070	.071	1.01	3	<u>88.00</u>	87.00
1405	.15	116.00	.31	.267	8	72.50	72.00
1510	.05	6.589	.007	.108	5	55.25	55.00
1615	.05	6.886	.023	.407	11	20.75	20.50
1701	.05	8.630	.136	5.73	7	63.00	59.55
1802	.10	237.00	2.273	.962	7	70.00	69.50
1915	.05	6.322	.207	.111	4	<u>77.50</u>	77.00

2 - S. F. Leonard, Chicago, Illinois.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
2008	Pumpkin - Large Cheese	B.seed
2104	Radish - Chartier	B.seed F.seed
2204	Salsify - Mammoth Sandwich Island	dirt
2305	Spinach - Long Standing	B.seed dirt
2404	Squash - Giant Summer Crookneck	B.seed
2509	Tomato - New Stone	dirt
2612	Turnip - Purple Top Strap Leaf	B.seed
2709	Ruta Baga - Purple Top	B.seed
2803	Cress - Water (large seed)	no test

2- S.F. Leonard, Chicago, Illinois.

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
2008	.15	116.50	1.961	1.690	3	<u>91.50</u>	89 .95
2104	.03	7.696	.135	1.75	2	82.25	81.00
2204	.05	7.670	.000	.000	7	51.00	51.00
2305	.05	10.248	.094	.002	4	<u>81.00</u>	80.25
2404	.25	118.50	.125	.11	3	<u>92.55</u>	92.25
2509	.05	4.360	.024	.493	5	68.50	68.00
2612	.03	8.440	.047	.557	2	89.25	89.00
2709	.05	9.121	.038	.416	2	<u>98.50</u>	98.00
2803	.05	9.931	----	----	2	<u>96.50</u>	96.50

R. H. Shumway, Rockford, Illinois. \$1.68.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
4	Bean - Stringless Green Pod	dirt
101	Bean - Burpee's Bush Lima	B.seed
205	Beet - Eclipse	B.Seed chaff
313	Cabbage - Early Jersey Wakefield	B.seed
409	Carrot - Ox Heart	chaff
513	Cauliflower - Snowball	chaff
612	Celery - WhitePlume	chaff
706	Corn - Stowell's Evergreen	B.seed
802	Cucumber - White Spine	chaff
905	Egg Plant - New York Purple	B.seed sand
1007	Endive - Moss Curled	F.seed chaff
1108	Kohl-Rabi - White	dirt F.seed
1202	Lettuce - Hanson	B.seed dirt
1310	Musk Melon - Rocky Ford	
1410	Water Melon - Kolb's Gem	B.seed dirt
1505	Onion - Red Wethersfield	B.seed
1620	Parsley - Moss Curled	chaff dirt
1712	Parsnip - Hollow Crown	chaff
1801	Pea - Heroine	B.seed
1911	Pepper - Bell	wood
2010	Pumpkin - Sugar	B.seed dried pulp

R.H.Shurway, Rockford, Illinois.

#1.63

March 11 1903

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. p	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. v	Real Value. P.V 100
4	.10	163.00	.088	.054	2	<u>91.00</u>	90.55
101	.12	156.00	.775	.497	6	50.00	49.75
205	.03	9.952	.076	.76	4	145.00	144.00
313	.04	6.013	.0152	.253	5	80.50	80.00
409	.04	2.182	.000	trace	6	46.00	46.00
513	.10	1.729	.006	.747	2	<u>83.00</u>	83.00
612	.04	4.724	.097	1.97	11	43.00	42.20
706	.08	108.90	2.725	2.49	4	67.00	65.30
802	.04	7.085	.000	.000	2	<u>95.00</u>	95.00
905	.04	3.195	.025	.077	5	59.50	59 .00
1007	.03	4.781	.335	.701	2	58.25	54.10
1108	.04	4.520	.013	.0288	2	75.00	75.00
1202	.03	6.971	.189	2.71	2	76.25	74.20
1310	.03	6.457	.000	.000	3	<u>89.50</u>	89.50
1410	.15	106.00	.138	.130	3	63.50	63.25
1505	.04	5.965	.015	.254	5	69.00	68.50
1620	.03	5.216	.007	.134	11	<u>71.00</u>	71.00
1712	.03	6.105	trace		10	<u>70.75</u>	70.75
1801	.09	162.20	.695	.429	7	89.00	83.50
1911	.03	3.422	.020	.584	5	54.50	54.00
2010	.15	110.00	1273	.253	3	<u>91.00</u>	90.76

2 - R. H. Shumway, Rockford, Illinois.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
2108	Radish - Chartier	B.seed dirt
2117	Salsify - Mammoth Sandwich Island	dirt
2307	Spinach - Long Standing	dirt
2401	Squash - Giant Crookneck	B.seed dirt
2506	Tomato - Stone	dirt
2605	Turnip - Purple Top Strap Leaf	B.seed
2714	Ruta Baga - Shirving's	B.seed
2812	Cress - Curled (large seed)	

2- R.H.Shumway, Rockford, Illinois,

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
2108	.04	7.48	.097	1.27	2	<u>99.50</u>	98.75
2217	.04	3.655	.028	.766	7	<u>75.00</u>	74.20
2307	.02	6.92	.097	1.40	6	70.00	68.75
2401	.18	123.00	.527	.412	3	71.00	70.50
2506	.03	4.047	.076	1.91	5	79.25	78.00
2605	.03	9.435	.022	.233	2	89.50	89.25
2714	.03	4.821	.048	.996	2	75.00	74.00
2812	.02	5.013	-----	---	1	<u>99.75</u>	

Vaughan's Seed Store, Chicago, Illinois. \$2.13.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
6)) 7)	Bean - Stringless Green Pod	
102)) 103)	Bean - Burpee's Bush Lima	B.seed
212	Beet - Eclipse	B.seed chaff
322	Cabbage - Early Jersey Wakefield	
403	Carrot - Ox Heart	chaff dirt
506	Cauliflower - New Snowball	
615	Celery - White Plume Self Blanching	chaff
702	Corn - Early Evergreen	B.seed
301	Cucumber - Improved White Spine	
904	Egg Plant - Improved New Y.large purple	B.seed
1003	Endive - Green Curled	cinders
1109	Kohl Rabi - Early White Vienna.	dirt
1207	Lettuce - Improved Hanson	chaff cinders
1305	Muskmelon - Rocky Ford	
1406	Water Melon - Improved Kolb's Gem	B.seed
1513	Onion - Red Wethersfield	
1607	Parsley - Champion Moss Curled	chaff B.seed
1712	Parsnip - Hollow Crown	chaff
1806	Pea - Heroine	

Vaughan's Seed Store, Chicago, Illinois.

\$2.13 Mar 12, 1903

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. P	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. V	Real Value. $\frac{P \cdot V}{100}$
6	.10	91.00	.000	.000	4	67.00	67.00
7	.10	86.00	.000	.000	4	67.00"	67.00
102	.00	73.50	1.94	2.675	6	14.00	13.60
103	.10	72.50	.335	.536	6	34.00	33.85
212	.05	6.193	.008	.13	4	<u>149.50</u>	149.40
322	.05	5.184	.000	.000	2	<u>93.50</u>	93.50
408	.05	6.045	.005	.06	4	<u>82.50</u>	82.25
506	.25	1.567	.000	.000	2	<u>86.50</u>	86.50
615	.05	4.462	.023	.516	11	<u>92.50</u>	92.00
702	.10	66.80	.038	.132	4	<u>88.00</u>	88.00
801	.05	4.298	.008	.186	2	<u>94.65</u>	94.41
904	.10	2.978	.008	.268	6	28.50	28.50
1003	.05	7.131	.033	.463	2	81.75	81.50
1109	.05	6.018	.020	.033	2	<u>96.50</u>	96.25
1207	.05	6.066	.037	.611	2	<u>96.50</u>	96.00
1305	.05	4.446	.000	.000	3	<u>85.50</u>	85.50
1406	.20	129.50	.079	.061	2	<u>85.00</u>	84.88
1503	.05	6.937"	.000	.000	5	69.25	69.25
1607	.05	6.761	.036	.532	14	29.75	29.75
1702	.05	6.105	trace		10	<u>70.75</u>	70.75
1806	.10	89.00	.000	.000	7	80.00	80.00

2 - Vaughan's Seed Store, Chicago, Illinois.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
1916	Pepper - Large Bell	
2001	Pumpkin - Vaughan's best sugar pie	B.seed
2109	Radish - Improved Chartier	B.seed
2201	Salsify - Mammoth Sandwich Island	dirt
2306	Spinach - Long Standing	B.seed dirt
2407	Squash - Summer Crookneck	B.seed dirt
2505	Tomato - New Stone	B.seed
2603	Turnip - Early Purple Top Strap Leaf	B.seed
2702	Ruta Baga - Vaughan's Improved	B.seed
2806	Cress - Water	no test

2- Vaughan's Seed Store, Chicago, Illinois.

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. P	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. V	Real Value. $\frac{P \cdot V}{100}$
1906	.05	5.204	.000	.000	5	<u>89.50</u>	89.50
2001	.25	122.00	.336	.276	3	<u>95.00</u>	94.73
2109	.05	7.098	.005	.070	2	83.25	83.300
2201	.05	5.664	.040	.707	3	<u>79.00</u>	78.25
2306	.05	30.62	.184	.616	5	70.50	70.00
2407	.30	120.00	1.302	1.10	2	<u>99.50</u>	99.00
2505	.10	3.401	.025	.79	3	82.00	81.25
2603	.03	10.482	.012	.490	2	<u>95.00</u>	94.50
2702	.05	8.961	.074	.827	2	<u>97.75</u>	97.00
2806	.10	2.191	----	---	0	00.00	

Class II.

Two Representative Eastern Firms .

W. Altee Burpee, Philadelphia, Pa. \$2.40.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
1) 2)	Bean - Stringless Green Pod	B.seed dirt
104) 105)	Bean - Burpee's Bush Lima	B.seed
204	Beet - Eclipse	B.seed chaff
325	Cabbage - Early Wakefield	
406	Carrot - Ox Heart	chaff
509	Cauliflower - Early Snowball	B.seed
617	Celery - White Plume	chaff
704) 705)	Corn - Stowell's Evergreen	B.seed
809	Cucumber - White Spine	stone F.seed
909	Egg Plant - New York Purple	B.seed F.seed
1009	Endive - Green Curled	
1111	Kohl-Rabi - White Vienna	B.seed
1206	Lettuce - Hanson	B.seed dirt
1301	Musk Melon - Netted Gem	B.seed oats
1407	Water Melon - Kolb's Gem	B.seed
1503	Onion - Red Wethersfield	B.seed
1605	Parsley - New Extra Dark Moss Curled	
1705	Parsnip - Hollow Crown	chaff

W. Altee Burpee, Philadelphia, Pa.

\$2.40

Mar. 16, 1903

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. P	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. V	Real Value. $\frac{P \cdot V}{100}$
1	.13	60.00	.000	.000	3	<u>100.00</u>	100.00
2							
104	.15	62.50	.335	.536	6	34.00	33.83
105		68.00	.950	1.140	6	16.00	15.153
204	.05	9.332	.095	1.01	3	140.50	139.40
325	.05	3.984	.000	.000	2	<u>89.50</u>	89.50
406	.05	8.840	.010	.110	6	<u>92.75</u>	92.50
509	.25	1.622	.005	.308	2	<u>83.50</u>	83.50
617	.05	2.961	.020	.675	11	<u>82.75</u>	82.50
704	.10	55.3	.689	.124	4	56.60	56.60
705		55.6					
809	.05	4.619	.026	.562	2	77.50	77.00
909	.05	2.506	.058	.023	5	22.50	22.00
1009	.05	4.901	.000	.000	4	<u>91.75</u>	91.75
1111	.05	3.575	.051	.0143	2	<u>95.00</u>	94.50
1206	.05	4.831	.030	.624	2	<u>94.75</u>	94.25
1301	.05	10.380	.070	.673	3	<u>91.50</u>	91.00
1407	.25	126.00	.057	.045	4	83.00	76.25
1503	.05	5.013	.000	.000	4	72.75	72.25
1605	.05	6.031	.008	.133	12	50.00	50.00
1705	.05	7.445	.006	.810	10	54.00	53.50

W. Atlee Burpee, Philadelphia, Pa. \$2.40.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
1803) 1804)	Pea - Heroine	B.seed
1901	Pepper - Bull Nose	B.seed dirt
2007	Pumpkin - Small Sugar	
2103	Radish - Chartier	B.seed dirt
2203	Salsify - Sandwich Island	dirt
2301	Spinach - Long Standing	dirt B.seed
2409	Squash - Golden Summer Crookneck	B.seed dirt
2508	Tomato - Stone	dirt
2609	Turnip - Purple Top Strap Leaf	dirt
2705	Ruta Baga - Purple Top	B.seed
2802	Cress - Water	no test

2- W. Aitoe Burpee,

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
1303	.10	107.02	1.496	1.40	7	88.00	87.75
1804							
1901	.05	3.113	.093	2.99	7	<u>76.00</u>	73.70
2007	.25	121.50	.000	.000	3	<u>85.50</u>	85.50
2103	.05	7.417	.053	.715	2	86.50	85.50
2203	.05	3.992	.041	1.02	7	64.50	63.25
2301	.05	13.395	.163	1.26	5	50.00	49.25
2409	.30	113.00	.787	.698	2	<u>97.50</u>	97.00
2503	.05	2.229	.012	.856	3	<u>96.25</u>	96.50
2609	.05	7.949	.000	.000	2	<u>99.00</u>	99.00
2705	.05	7.532	.023	.306	2	<u>95.50</u>	95.00
2802	.00	1.571	.000	.000	0	.0000	.0000

Peter Henderson, New York, N. Y. \$2.70.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
3	Bean - Burpee's Stringless Green Pod	B.seed
109	Bean - Burpee's Bush Lima	B.seed
201	Beet - Eclipse	B.seed chaff
323	Cabbage - Select Early Jersey Wakefield	
407	Carrot - Ox Heart	chaff
507	Cauliflower - Early Snowball	B.seed
626	Celery - Perfected White Plume	dirt
703	Corn - Stowell's Evergreen	B.seed
811	Cucumber - Improved Early White Spine	
911	Egg Plant - N. Y. Improved Spineless	B.seed sand
1001	Endive - Green Curled	chaff
1101	Kohl Rabi - Early White Vienna	B.seed sand
1203	Lettuce - Hanson	chaff dirt
1309	Musk Melon - Rocky Ford	B.seed
1401	Water Melon - Kolb's Gem	pulp B.seed
1504	Onion - Wethersfield Large Red	stone B.seed
1602	Parsley - Champion Moss Curled	chaff dirt
1702	Parsnip - Henderson's Hollow Crown	chaff
1808	Pea - Heroine	B.seed
1906	Pepper - Large Bell	dirt

Peter He derson, New York, N.Y.

\$2.70

Mar 16 1903

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
3	.10	205.00	.8168	.398	3	<u>95.00</u>	94.65
109	.10	174.00	.602	1.49	6	3.00	2.95
201	.05	7.371	.154	.209	4	145.50	145.20
323	.05	3.531	.000	.000	2	83.50	83.50
407	.05	6.927	.005	.070	6	<u>86.25</u>	86.00
507	.25	1.304	.024	1.85	2	79.00	77.50
626	.05	3.592	.031	.864	10	<u>92.75</u>	92.00
703	.10	108.50	.915	.839	4	71.00	70.50
811	.05	7.913	.000	.000	2	78.00	78.00
911	.10	3.864	.157	.403	5	67.50	64.70
1001	.05	4.053	.047	1.16	2	86.50	85.50
1101	.05	3.968	.040	.010	2	<u>95.50</u>	94.50
1203	.05	5.086	.018	.354	2	83.75	83.50
1309	.10	7.850	.017	.240	3	76.50	76.00
1401	.25	130.00	.045	.35	3	79.50	79.25
1504	.05	4.107	.006	.141	4	63.25	68.00
1602	.05	8.941	.060	.671	9	<u>72.50</u>	72.00
1702	.05	5.735	.005	.087	8	<u>70.75</u>	70.00
1808	.10	161.00	1.367	.851	7	61.00	60.75
1906	.05'	2.635	.017	.722	7	62.50	62.00

2 - Peter Henderson & Co., New York.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
2005	Pumpkin - Sugar	B.seed
2101	Radish - Breckert's Chartier	B.seed dirt
2209	Salsify - Mammoth Sandwich Island	dirt
2304	Spinach - Long Standing	dirt
2405	Squash - Bush Summer Crookneck	B.seed
2501	Tomato - New Stone	dirt B.seed
2602	Turnip - Red Top Strap Leaf	B.seed
2701	Ruta Baga - Improved Amer. Purple Top	B.seed
2801	Cress - Water	no test

2- Peter Henderson, ^{Le}new York.

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. P	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. V	Real Value. P.V 100
2006	.25	156.00	22016	1.73	3	<u>96.50</u>	94.93
2101	.05	7.322	.100	.732	2	64.25	63.00
2209	.10	5.777	.047	.815	7	<u>83.00</u>	82.25
2304	.05	5.960	.004	.067	5	71.50	71.25
2405	.25	121.60	.997	.824	2	84.00	83.25
2501	.05	3.101	.046	1.43	3	<u>94.50</u>	93.75
2602	.05	7.240	.051	.707	3	85.25	84.75
2701	.05	9.176	.047	.512	2	74.75"	74.25
2801	.10	5.106	---	----	0	00.00	

Class III.

C o m m i s s i o n F i r m s .

D. M. Ferry & Co., Detroit, Mich: Champaign Box.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
115	Bean - Dwarf Large White	B.seed
213	Beet - Early Eclipse	B.seed chaff
333	Cabbage - Early Jersey Wakefield	
401	Carrot - Ox Heart	chaff dirt
517	Cauliflower - Early Snowball	
610	Celery - White Plume	chaff
723	Corn - Stowell's Evergreen	B.seed
824	Cucumber - White Spine	B.seed
913	Egg Plant - Large Purple	dirt
1012	Endive - Green Curled	cinders
1113	Kohl Rabi - Early White Vienna	B.seed F.seed
1243	Lettuce - Hanson	dirt F.seed
1319	Musk Melon - Netted Gem	
1419	Water Melon - Kolb's Gem	B.seed
1422	Water Melon - Kolb's Gem	
1519	Onion - Red Wethersfield	
1603	Parsley - Champion Moss Curled	chaff dirt
1723	Parsnip - Hollow Crown	chaff
1823	Pea - Little Gem	
1824	Pea - Champion of England	B.seed

D.M.Ferry & CO. Detroit, Mich.

Champaign Box.

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. P	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. V	Real Value. P.V 100
115	.10	117.00	2.600	.145	6	6.00	4.91
213	.05	11.735	.025	.213	4	137.00	137.00
335	.05	4.481	.000	.000	2	89.00	89.00
401	.05	7.472	.390	5.230	8	47.47	44.80
517	.05	1.331	.000	.000	3	60.00	60.00
610	.05	.703	.005	.711	21	<u>66.50</u>	66.00
723	.10	136.30	.485	.357	4	79.00	79.00
824	.05	7.859	.023	.293	2	61.50	61.00
913	.05	1.549	.030	.193	5	57.00	56.50
1012	.05	4.713	.004	.360	4	76.50	76.00
1113	.05	4.223	.013	.038	2	<u>87.50</u>	87.25
1243	.05	5.881	.071	1.21	2	<u>94.75</u>	93.50
1319	.05	1.660	.000	.000	3	<u>96.50</u>	96.50
1419	.05	10.97	1.05	.454	6	70.00	6;96
1422	.05	6.355	.000	.000	3	78.00	78.00
1519	.05	5.139	.000	.000	6	75.00	75.00
1603	.05	3.735	.016	.479	9	41.50	41.00
1723	.05	6.017	.050	.834	8	27.00	26.78
1823	.10	190.00	.000	.000	7	60.00	60.00
1924	.10	193.00	.340	.184	7	65.00	64.75

2 - D. M. Ferry & Co., Detroit, Mich. Box.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
1908	Pepper - Large Bell	B.seed dirt
2138	Radish - Chartier	B.seed dirt
2210	Salsify -	dirt rock
2323	Spinach - Round Summer	B.seed
2421	Squash - Mammoth Golden Summer Crookneck	B.seed
2511	Tomato - Stone	dirt F.seed
2628	Turnip - Early Purple Top Strap Leaf	dirt
2706	Ruta Baga - Improved Purple Top	B.seed

2- D.M. Ferry & CO. Detroit, Mich, Box.

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
1908	.005	1.588	.005	.502	10	68.00	67.75
2138	.05	3.665	.098	1.05	2	88.75	88.00
2210	.05	4.455	.103	2.31	7	53.50	51.00
2323	.05	6.933	.084	1.20	5	69.50	68.75
2421	.05	7.95	.080	.01	4	50.00	49.75
2511	.05	1.571	.000	.000	5	87.25	87.25
2628	.05	11.945	.022	.039	2	<u>97.75</u>	97.50
2706	.05	5.975	.026	.436	2	<u>95.25</u>	95.00

D. M. Ferry & Co., Detroit, Michigan. Ordered Seeds.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
117	Bean - Dwarf Large White Lima	dirt
241	Beet - Early Eclipse	B.seed
341	Cabbage - Early Jersey Wakefield	B.seed
427	Carrot - Ox Heart	chaff stone
522	Cauliflower - Early Snowball	B.seed
629	Celery - white Plume	chaff F.seed
726	Corn - Stowell's Evergreen	B.seed
829	Cucumber - Early White Spine	B.seed stone
917	Egg Plant - Improved Large Purple	B.seed
1017	Endive - Large Green Curled	
1118	Kohl Rabi - Early White Vienna	B.seed
1249	Lettuce - Hanson	dirt
1328	Musk Melon - Netted Gem	B.seed
1425	Water Melon - Kolb's Gem	
1539	Onion - Large Wethersfield	
1623	Parsley - Champion Moss Curled	dirt chaff
1730	Parsnip - Hollow Crown	chaff
1823	Pea - Champion of England	
1922	Pepper - Large Bell	B.seed
2141	Radish - Improved Chartiers	B.seed dirt

D.M.Ferry & CO. Detroit, Michigan.

Ordered Seeds,

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. P	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. V	Real Value. P.V 100
117	.10	74.00	.209	.282	6	17.00	11.96
241	.05	16.325	.269	.160	6	132.50	132.00
341	.05	5.639	.022	.392	2	<u>97.00</u>	97.00
427	.05	3.455	.090	1.65	6	54.50	53.92
522	.25	1.342	.009	.672	3	<u>81.50</u>	80.50
629	.05	2.122	.018	.849	12	<u>65.50</u>	65.00
726	.10	59.50	1.600	2.69	4	69.00	67.10
829	.05	10.409	.138	1.81	2	<u>97.50</u>	96.00
917	.05	2.224	.018	.811	5	48.00	47.75
1017	.05	2.821	.000	.000	4	84.75	84.75
111 8	.05	3.976	.019	.470	2	<u>95.50</u>	95.00
1249	.05	7.971	.118	1.50	2	<u>90.75</u>	90.25
1328	.05	10.35	.132	1.75	3	<u>87.50</u>	85.90
1425	.05	9.09	.000	.000	3	79.00	79.00
1539	.05	5.226	.000	.000	5	<u>91.75</u>	91.75
1623	.05	4.139	.074	1.79	9	64.50	63.30
1730	.05	7.39	.075	.952	10	58.00	57.42
182 8	.00	79.70	.000	.000	7	<u>94.00</u>	94.00
1922	.05	1.742	.02	1.150	10	50.00	49.50
2141	.05	10.656	.144	1.350	2	82.25	81.50

2 - D. M. Ferry & Co., Detroit, Michigan.. Ordered Seeds.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
2220	Salsify - Mammoth Sandwich Island	dirt
2327	Spinach - Round Summer	dirt
2427	Squash - Golden Summer Crookneck	
2535	Tomato - Stone	chaff
2632	Turnip - Early Purple Top Strap Leaf	dirt
2717	Ruta Baga - Improved Purple Top	B.seed

2- D.M.Ferry & CO. Detroit ,Michigan. Ordered Seeds.

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{p}{y}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{y}{v}$	Real Value. $\frac{p \cdot v}{100}$
2220	.05	5.620	.033	.677	7	63.50	67.75
2327	.05	3.570	.160	1.87	5	<u>80.00</u>	78.50
2427	.05	9.830	.000	.000	2	<u>92.50</u>	92.00
2535	.05	2.621	.005	.191	3	<u>86.25</u>	86.00
2632	.05	10.922	.017	.156	2	<u>99.25</u>	98.00
2717	.05	10.596	.023	.267	2	<u>98.50</u>	98.25

David Landreth & Sons, Philadelphia, Pa.

Box.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
220	Beet - Egyptian Extra Early Turnip	B.seed chaff
333	Cabbage - Select Very Early Jersey Wakefield	B.seed chaff
402	Carrot - Orange Danver's Half Long	B.seed
601	Celery - White Plume	B.seed dirt
822	Cucumber - Long Green	B.seed
1112	Kohl Rabi - White Vienna	dirt
1240	Lettuce - Hanson Head	chaff
1323	Musk Melon - Rocky Ford	
1518	Onion - Large Red Wethersfield	B.seed
1616	Parsley - Fine Curled	dirt chaff
1724	Parsnip - Hollow Crown	chaff dirt
1903	Pepper - Large Sweet Spanish	B.seed
2137	Radish - Chartiers	B.seed dirt
2322	Spinach - Bloomsdale	B.seed
2420	Squash - Early White Bush	B.seed dirt
2512	Tomato - Stone	dirt
2624	Turnip - Early Flat Red Strap Leaf	B.seed

David Landreth & Sons, Philadelphia, Pa. Box.

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. P	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. V	Real Value. $\frac{P \cdot V}{100}$
220	.05	11.235	.291	.260	4	145.00	144.50
334	.05	3.584	.0245	.684	2	85.00	85.00
402	.05	7.074	.060	7776	6	50.00	46.12
601	.05	2.922	.003	.074	14	<u>64.25</u>	64.00
322	.05	4.132	.0425	1.022	2	68.00	67.00
1112	.05	2.691	.027	.010	2	<u>84.50</u>	83.75
1240	.05	7.130	.010	.033	2	<u>97.75</u>	97.50
1323	.05	8.220	.000	.000	3	<u>93.50</u>	93.00
1518	.05	2.66	.006	.226	6	79.00	78.50
1616	.05	6.809	.211	.31	9	53.35	51.60
1724	.05	7.05	.085	1.16	8	27.25	26.50
1903	.05	2.62	.010	.262	5	<u>74.50</u>	74.00
2137	.05	8.473	.059	.695	2	<u>91.75</u>	91.00
2322	.05	10.392	.051	.472	4	72.00	71.50
2420	.05	6.470	.123	1.900	2	<u>98.00</u>	97.00
2512	.05	2.837	.042	1.46	7	53.25	52.50
2624	.05	12.08	.01	.118	2	<u>96.25</u>	96.00

David Landreth & Sons, Philadelphia, Pa. Order.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
240	Beet - Egyptian Extra Early Turnip very	B.seed
342	Cabbage - Select Early Jersey Wakefield	
428	Carrot - Orange Danver's Half Long	F.seed chaff dirt
521	Cauliflower - Early Snowball	B.seed
628	Celery - White Plume	chaff
831	Cucumber - Long Green Turkey	B.seed dirt
1117	Kohl Rabi - White Vienna	B.seed
1248	Lettuce - Hanson Head	dirt
1326	Musk Melon - Rocky Ford	B.seed pulp
1541	Onion - Large Red Wethersfield	
1624	Parsley - Fine Curled	chaff
1731	Parsnip - Hollow Crown	chaff F.seed
1931	Pe per - Large Sweet Spanish	B.seed
2140	Radish - Chartier	B.seed dirt
2228	Spinach - Bloomsdale	dirt B.seed
2426	Squash - Early White Bush	
2536	Tomato - Stone	chaff radish
2631	Turnip - Large Early Red Top Globe	P.seed

David Landreth & Sons, Philadelphia, Pa.

Order

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. P	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. V	Real Value. $\frac{P \cdot V}{100}$
240	.05	11.510	.3905	3.390	6	<u>149.50</u>	145.00
342	.05	4.096	.000	.000	2	87.00	87.00
428	.05	8.220	.350	4.27	6	<u>81.00</u>	75.92
521	.05	1.555	.010	1.55	3	<u>95.00</u>	95.00
628	.05	3.095	.006	.194	10	<u>84.75</u>	84.75
831	.05	4.048	.025	.617	2	30.00	29.50
1117	.05	2.582	.005	.197	2	<u>85.80</u>	85.25
1243	.05	6.786	.035	.516	2	<u>94.75</u>	94.27
1326	.05	8.510	.019	.223	3	73.00	73.00
1541	.05	2.98	.000	.000	6	<u>92.50</u>	92.50
1624	.05	7.081	1.004	.056	9	<u>75.25</u>	75.25
1731	.05	7.415	.120	1.64	8	<u>32.25</u>	30.75
1931	.05	2.239	.005	.023	5	67.50	67.25
2140	.05	8.283	.089	1.07	2	<u>94.00</u>	93.50
2228	.05	11.963	.062	.521	5	68.50	88.00
2426	.05	7.790	.000	.000	2	<u>100.00</u>	100.00
2536	.05	2.921	.009	.030	3	<u>83.50</u>	88.00
2631	.05	11.933	.006	.504	2	<u>95.56</u>	95.25

L. L. May & Co., St. Paul, Minn. Box.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
223	Beet - Eclipse	B.seed
336	Cabbage - Henderson's Early Summer	
423	Carrot - Denver's Half Long	chaff
518	Cauliflower - Snowball	
623	Celery - White Plume	
720	Corn - Stowell's Evergreen	
823	Cucumber - Green Prolific	B.seed stone
914	Parsley - Curled	B.seed chaff
1116	Kohl Rabi - Early White	dirt
1245	Lettuce - Hanson	chaff
1321	Musk Melon - Green Nutmeg	pulp
1521	Onion - Yellow Globe Danvers	
1610	Parsley - Early Curled	chaff dirt
1726	Parsnip - Hollow Crown	chaff
1819	Pea - McLean's Little Gem	
1820	Pea - McLean's Little Gem	B.seed
2134	Radish - Chartiers	dirt
2212	Salsify - Mammoth Sandwich Island	dirt
2320	Spinach - Bloomsdale	dirt
2418	Squash - Hubbard	
2518	Tomato - Acme	dirt
2625	Turnip - Purple Top Strap Leaf	B.seed

L. L. May & CO. St. Paul, Minn.,

Box.

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
223	.05	9.530	.1252	1.31	4	<u>151.50</u>	150.00
336	.05	4.800	.000	.000	2	<u>94.00</u>	94.00
423	.05	5.044	.060	1.19	6	<u>83.00</u>	82.00
518	.05	.563	.000	.000	3	<u>84.00</u>	84.00
623	.05	2.540	.000	.000	11	<u>76.25</u>	76.25
720	.05	26.50	.000	.000	4	43.50	43.50
823	.05	5.692	.143	.201	0	00.00	00.00
914	.05	2.548	.075	2.94	2	74.26	72.10
1116	.05	4.419	.0385	.087	6	4.50	4.25
1245	.05	3.011	.053	1.93	2	<u>92.00</u>	90.75
1321	.05	5.425	.010	.542	3	<u>83.00</u>	83.00
1521	.05	4.030	.000	.00	7	16.75	16.75
1610	.05	5.141	.184	3.53	9	<u>83.00</u>	84.80
1726	.05	5.587	.100	1.74	7	63.75	67.64
1819	.05	35.000	.000	.000	7	86.00	86.00
1820	.05	34.00	.204	.60	4	<u>92.00</u>	91.50
2134	.05	9.156	.034	.9182	2	<u>96.00</u>	95.00
2212	.05	4.612	.098	2.12	7	<u>82.25</u>	80.25
2320	.05	7.590	.056	7.33	3	<u>86.00</u>	84.25
2418	.05	6.700	.000	.00	2	<u>100.00</u>	100.00
2518	.05	2.255	.207	.311	2	<u>97.50</u>	97.00
2625	.05	1.272	.009	.709	2	83.76	83.50

L. L. May & Co., St. Paul, Minn. Order.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
236	Beet - Eclipse	B.seed
339	Cabbage - Henderson's Early Summer	B.seed
426	Carrot - Danver's Half Long	chaff stone
520	Cauliflower - Extra Early Snowball	dirt
627	Celery - White Plume	dirt F.seed
724	Corn - Stowell's Evergreen	B.seed
725	Corn - Stowell's Evergreen	
828	Cucumber - Green Prolific	wheat
1016	Endive - Green Curled	chaff F.seed
1246	Lettuce - Hanson	dirt
1325	Musk Melon - Early Green Nutmeg	
1538	Onion - Yellow Globe Danvers	
1621	Parsley - Extra Curled	dirt chaff
1728	Parsnip - Hollow Crown	chaff
1826	Pea - McLean's Little Gem	B.seed
1827	Pea - McLean's Little Gem	
2142	Radish - Chartiers	dirt
2219	Salsify - Mammoth Sandwich Island	dirt
2326	Spinach - Curled Bloomsdale	dirt
2424	Squash - Hubbard	B.seed dirt
2425	Squash - Hubbard	B.seed dirt
2533	Tomato - Acme	dirt
2630	Turnip - Purple Top Strap Leaf Flat	

L.L. May & CO.

St. Paul, Minn.

Order.

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
236	.05	6.155	.2193	3.56	6	89.50	86.30
339	.05	3.754	.022	.537	2	84.50	84.00
426	.05	4.378	.325	7.42	6	<u>82.25</u>	75.92
520	.20	.963	.004	.413	3	69.00	68.50
627	.05	2.225	.020	.901	10	<u>70.25</u>	69.50
724	.05	23.40	.170	.729	4	55.00	55.00
725	.05	26.04	.000	.000	6	52.50	52.50
828	.05	5.908	.077	1.31	2	<u>100.00</u>	98.79
1016	.05	2.269	.025	1.10	2	74.50	73.75
1248	.05	2.681	.0525	1196	2	<u>99.00</u>	98.00
1325	.05	4.230	.000	.000	3	<u>86.00</u>	86.00
1538	.05	3.286	.000	.000	6	70.75	70.75
1621	.05	4.601	.158	3.45	8	<u>98.00</u>	94.60
1728	.05	2.260	.000	.000	8	64.50	64.50
1826	.05	38.00	.124	.326	3	<u>95.00</u>	94.50
1827	.05	37.00	.000	.000	3	<u>98.00</u>	98.00
2142	.05	5.378	.75	1.410	2	86.00	85.75
2219	.05	3.025	.000	.000	7	<u>88.00</u>	88.00
2326	.05	5.303	.063	.28	3	<u>86.50</u>	85.74
2424	.05	5.740	.289	.504	2	<u>96.00</u>	95.75
2425	.05	6.000	.014	.235	2	84.00	83.75
2533	.05	1.738	.026	1.51	5	59.50	58.25
2630	.05	6.480	.000	.000	2	<u>97.50</u>	97.50

Briggs Bros. & Co., Rochester, N. Y. Box.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
114	Bean - Burpee's Dwarf Bush Lima	
214	Beet - New Eclipse	B.seed chaff
335	Cabbage - True Early Jersey Wakefield	
403	Carrot - Ox Heart	chaff
516	Cauliflower - Henderson's Snowball	B.seed
625	Celery - White Plume	dirt F.seed
721	Corn - Stowell's Evergreen	B.seed dirt
826	Cucumber - Improved Early White Spine	B.seed chaff
915	Egg Plant - Improved N. Y. Round ^{Purple} Top	B.seed F.seed
1015	Endive - Green Curled	chaff F.seed
1115	Kohl Rabi - Large Purple	B.seed dirt
1244	Lettuce - Hanson	chaff F.seed
1322	Musk Melon - Hackensack	
1420	Water Melon - Kolb's Gem	
1514	Onion - Large Wethersfield	B.seed
1604	Parsley - Chartier's Double Moss Curled	chaff F.seed
1722	Parsnip - Hollow Crown	chaff
1825	Pea - McLean's Little Gem	B.seed
1920	Pepper - Mountain Sweet	B.seed
2015	Pumpkin - Sweet or Sugar	B.seed chaff
2016	Pumpkin - Sweet or Sugar	B.seed chaff

Briggs Bros., Rochester, N. Y. Box.

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
114	.10	48.00	.000	.000	6	32.00	32.00
214	.05	18.324	.268	.142	4	107.50	106.00
335	.05	6.548	.000	.000	5	21.00	21.00
403	.05	7.468	.160	2.220	6	47.25	44.50
516	.05	3.645	.005	.137	0	00.00	00.00
625	.05	3.28	.011	.335	11	45.00	45.00
721	.10	123.20	1.480	1.22	4	49.50	49.00
826	.05	8.596	.059	.636	2	<u>84.50</u>	84.00
915	.05	2.564	.085	.0331	6	25.00	24.20
1015	.05	3.371	.291	.542	4	29.00	27.45
1115	.05	8.441	.026	.038	5	2.50	2.45
1244	.05	7.359	1.530	2.08	2	<u>85.25</u>	83.25
1322	.05	8.367	.000	.000	5	62.00	62.00
1420	.05	7.055	.000	.000	3	76.00	76.00
1514	.05	8.303	.020	.027	5	3.50	3.25
1604	.05	8.686	.140	1.620	0	00.00	00.00
1722	.05	8.953	.200	2.24	0	00.00	00.00
1825	.10	183.000	.834	.455	7	70.00	69.00
1920	.05	4.553	.060	1.32	5	61.50	60.70
2015	.05	11.57	.312	.272	5	29.60	29.61
2016	.05	8.760	.181	.202	5	40.00	39.91

2 - Briggs Bros. & Co., Rochester, N. Y. Box.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
2136	Radish - Beckerts Chartiers	B.seed dirt
2207	Salsify - Blue Flowered French	B.seed
2324	Spinach - Long Leaved	B.seed dirt
2422	Squash - Summer Crookneck	B.seed dirt
2513	Tomato - Stone	sand
2623	Turnip - Purple Top Strap Leaf	dirt
2712	Ruta Baga - Shirving's Purple Top	B.seed dirt

2 - Briggs Bros. & CO., Rochester, N. Y.

Box.

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
2136	.05	12.116	.232	.233	2	79.75	78.50
2207	.05	9.915	.343	.346	0	00.00	00.00
2324	.05	16.335	.083	.509	4	49.00	48.50
2422	.05	7.135	.044	.613	4	13.00	12.50
2513	.05	1.543	.043	3.12	6	61.50	59.00
2623	.05	11.815	.045	.303	2	<u>89.50</u>	89.25
2712	.05	12.621	.061	.484	9	1.50	1.00

Crosman Bros., Rochester, N. Y. Box.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
17	Bean - Early Valentine	B.seed
219	Beet - Eclipse	B.seed chaff
337	Cabbage - Early Wakefield	B.seed
405	Carrot - Ox Heart	chaff
515	Cauliflower - Snowball	
624	Celery - White +lume	F.seed
722	Corn - Stowell's Evergreen	B.seed
825	Cucumber - Early White Spine	B.seed F.seed
914	Egg Plant - Improved New York Purple	B.seed stone
1013	Endive - White Curled	chaff F.seed
1114	Kohl Rabi - Early White Vienna	B.seed dirt
1241	Lettuce - Hanson	chaff dirt
1320	Musk Melon - Casaba	
1421	Water Melon - Kolb's Gem	wood
1520	Onion - Red Wethersfield	B.seed
1618	Parsley - Fine Double Curled	chaff dirt
1727	Parsnip - Improved Hollow Crown	chaff
1822	Pea - Champion of England	B.seed
1910	Pepper - Bell	dirt
2139	Radish - Beckerts Chartier	B.seed dirt

Crosman Bros., Rochester, N. Y.

Box.

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
17	.10	194.00	.3524	.1815	4	47.00	46.00
219	.05	15.925	.152	.956	4	61.00	60.50
337	.05	5.557	.042	.756	9	3.00	2.50
405	.05	6.500	.010	.150	6	13.00	12.50
515	.05	1.687	.010	.160	3	13.50	13.00
624	.05	2.778	.014	.504	14	23.50	23.40
722	.10	148.00	1.982	.932	4	24.50	24.00
825	.05	7.039	.052	.739	2	58.50	58.00
914	.05	1.969	.060	.305	10	2.00	1.94
1013	.05	3.303	.071	2.15	2	77.25	16.80
1114	.05	6.134	.064	.01	7	30.00	29.30
1241	.05	4.126	.075	1.82	2	58.78	58.64
1320	.05	5.320	.000	.000	4	53.50	53.50
1421	.05	7.537	.020	.264	6	8.00	7.80
1520	.05	7.048	.022	.313	6	15.125	15.00
1618	.05	3.161	.042	1.33	6	00	00
1727	.05	3.55	.010	.282	7	<u>75.00</u>	74.85
1822	.05	187.00	.96	.513	7	40.00	39.50
1910	.05	1.636	.006	.366	12	19.00	18.75
2139	.05	8.411	.110	1.31	2	85.75	85.00

2 - Cresman Bros., Rochester, N. Y. Box.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
2205	Salsify -	dirt
2321	Spinach - Round	B.seed
2419	Squash - Early Yellow Bush Scallop	
2517	Tomato - Acme	dirt F.seed
2626	Turnip - Purple Top Strap Leaf	B.seed
2710	Ruta Baga - Shirving's Improved ^{Purple} Top	B.seed dirt

2- Crosman Bros., Rochester, N. Y. Box.

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
2205	.05	4.190	.156	3.72	0	00	00.00
2321	.05	8.05	.066	.820	7	25.00	24.25
2419	.05	7.25	.012	1.65	2	30.00	29.75
2517	.05	2.211	.021	.654	3	<u>91.75</u>	91.00
2626	.05	10 .93	.06	.551	3	39.75	39.50
2710	.05	9.461	.077	.740	2	77.00	76.25

Jerome B. Rice Seed Co., Cambridge, N. Y. Box.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
19	Bean - Lightening Earliest Red Valentine	
217	Beet - New Dark Eclipse	B.seed chaff
338	Cabbage - Henderson's Early Summer	B.seed
404	Carrot - New Ox Heart Orange	chaff dirt
519	Cauliflower - Henderson's Early Snowball	
614	Celery - Giant Pascal	dirt
718	Corn - Stowell's Evergreen	B.seed
827	Cucumber - Early Arlington White Spine	
1242	Lettuce - Improved Hanson	chaff
1324	Musk Melon - Rocky Ford	B.seed pulp
1424	Water Melon - 81-lb. Cuban Queen	
1515	Onion - Wethersfield Large Red	
1617	Parsley - Champion Moss Curled	dirt F.seed
1725	Parsnip - Long White Dutch	chaff dirt
1821	Pea - Champion of England	
1909	Pepper - Burpee's Ruby King	dirt
2135	Radish - Improved Chartiers	dirt
2216	Salsify -	dirt
2325	Spinach - Bloomsdale Savoy Leaved	B.seed dirt
2423	Squash - Early Summer Crookneck	B.seed
2519	Tomato - Acme	dirt
2627	Turnip - Extra Early Purple Top Milan	B.seed F.seed
2711	Ruta Baga - Shirving's Improved PurpleTop	B.seed

Jerpne B, Rice Seed Co., Cambridge, N. Y. Box.

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. P	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. V	Real Value. P.V 100
19	.10	123.00	.000	.000	4	<u>94.00</u>	94.00
217	.05	13.755	0.223	1.62	4	139.50	137.00
338	.05	5.555	.0218	.392	2	44.00	44.00
404	.05	5.300	.420	7.93	4	49.75	45.11
519	.05	.763	.000	.000	3	45.00	45.00
614	.05	2.19	.018	.822	11	<u>79.00</u>	78.50
718	.05	37.50	.500	1.33	4	77.00	76.00
827	.10	15.163	.000	.000	2	51.50	51.50
1242	.05	2.641	.010	2.641	4	83.25	83.00
1324	.10	10.345	.068	.066	3	<u>89.00</u>	89.00
1424	.05	8.365	.000	.000	3	76.00	76.00
1515	.05	6.35	.000	.000	4	44.75	44.75
1617	.05	2.949	.025	.346	9	43.25	43.00
1725	.05	3.500	.053	1.65	8	20.75	20.00
1821	.05	230.00	2.56	1.11	7	78.00	77.00
1909	.05	.735	Trace		10	46.00	46.00
2135	.10	15.476	.247	1.19	2	85.25	84.75
2216	.05	4.497	.071	1.53	7	32.50	32.00
2325	.05	9.097	.062	.682	3	75.50	75.00
2423	.05	6.33	.021	.332	2	64.00	63.75
2519	.05	1.166	.045	.339	5	58.75	55.50
2627	.05	8.796	.177	2.01	3	52.75	51.50
2711	.05	9.672	.014	.145	2	65.25	65.00

Class IV.

C h e a p O f f e r s i n F a r m P a p e r s .

Alneer Bros. Mar. 18

\$.10

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
226	Beet-Dewing's Improved Blood Turnip	B.seed
324	Cabbage-Premium Flat Dutch	
425	Carrot-Half Long Nantes	chaff F.seed
1216	Lettuce-Early Curled Simpaon	chaff dirt
1317	Muskmelon-New Columbus	
1412	Watermelon-New Delaware	mushmelon seed
1526	Onion-Yellow Globe Danvers	
2309	Spinach-Long Standing	dirt
2514	Tomato- Livingston's Perfect	B.seed
2619	Turnip-Early Purple Top Munich	dirt



Aineer Bros. Rogkford, Ill, Mar. 13, 1903 \$.10

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
226	.02	5.035	.0857	1.70	4	123.50	122.00
324	.02	4.335	.000	.00	2	83.00	83.00
425	.02	4.060	1.30	44.30	6	24.25	13.26
1216	.02	2.479	.017	.863	2	<u>92.00</u>	91.50
1317	.02	5.232	.000	.000	4	65.50	65.50
1412	.02	6.965	.230	.331	3	84.00	33.75
1526	.02	3.923	.000	.000	5	38.25	38.25
2309	.02	6.462	.075	1.16	5	<u>85.00</u>	85.00
2514	.02	2.019	.206	.298	5	73.00	77.25
2619	.02	4.218	.032	.760	2	<u>99.00</u>	98.50

A. C. Anderson, Columbus, Neb. \$.10 Mar.23

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
237	Beet-Mammoth Long Red	B, seed
331	Cabbage-Hollander	
1231	Lettuce-Denver Market	cha. f r. seed
2117	Radish-Long Scarlet	B. seed dirt
2527	Tomato-Peach	

SEEDS BUY SEEDS THAT WILL GROW
 Ours have that reputation, there are plenty that
 have not. 10 pkts. Annual Flower Seeds, 10c.
 5 pkts. Vegetable Seeds, 10c. 5 pkts. Giant Cyclamen, Double Dahlia,
 Primrose, Mammoth Verbena and Monstrosa Pinks, 7c. **PLANTS:**
 6 Boxes, 25c; 4 Pelargoniums, 25c; 6 Geraniums, 25c; 6 Begonias, 30c.
 Catalogue free. A. C. ANDERSON, COLUMBUS, NEBRASKA.

A.C. Anderson, Columbus, Neb. $\$.10$ Mar. 23

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
237	.02	9.732	.2095	2.15	6	148.50	148.50
331	.04	4.491	.000	.000	2	96.00	96.00
1231	.02	8.591	.203	.295	4	95.50	95.25
2117	.02	8.942	.130	1.46	2	85.75	83.50
2527	.02	5.906	.000	.000	5	76.75	76.75

J. J. Bell, Deposit, N. Y.

Mar. 12

\$.25

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
229	Beet-Perfect Red Turnip	B.seed
318	Cabbage-Winter Header	dirt
607	Winter Giant	
820	Cucumber-Family Favorite	B.seed F.seed
1230	Lettuce-Morning Hustler	chaff
1313	Muskmelon-Rocky Ford	
1527	Onion-New York Yellow Globe	
1718	Parsnip- White Sugar	chaff
2119	Radish-Early Robin	B.seed F.seed
2414	Squash- Golden Winter	
2526	Tomato-Earliest in The Morning	dirt
	Herbs-Mixed	
	9 Packets Sweet Peas	
	20 Packets Flower Seeds	

J.J.Bell, Deposit, N.Y., Mar. 12, 1903.

\$.25

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
229	.006	4.632	.086	1.86	6	149.00	148.00
318	.006	2.319	.000	.00	2	83.50	83.50
607	.006	.350	.004	1.15	11	57.25	56.30
820	.006	3.642	.050	.137	2	75.00	75.00
1230	.006	1.721	.005	.291	2	<u>93.50</u>	93.25
1313	.006	3.200	.000	.000	5	<u>88.00</u>	88.00
1527	.006	1.746	.011	.628	4	56.25	56.00
1718	.006	4.808	.030	.625	10	<u>70.00</u>	69.50
2119	.006	4.712	.045	.955	2	34.25	33.50
2414	.006	4.730	.000	.000	4	28.00	28.00
2526	.0066	1.711	.031	1.81	5	47.00	45.50

H. W. Buckbee, Mar. 12, 1903

\$.10

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
1236	Lettuce-Twelve Best	dirt chaff
1533	Onion- Eight Best	
2130	Radish- Seventeen Best	dirt
2531	Tomato- Eleven Best	dirt F.seed
2622	Turnip- Seven Best	
	25 Spring Flowering Bulbs	



H.W.Buckbee, Mar.12, 1903

\$.10

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
1236	.02	3.929	.052	1.33	3	15.25	14.00
1533	.02	3.147	.00	.00	3	4.00	4.00
2130	.02	4.022	.093	2.44	2	57.00	56.50
2531	.02	2.612	.102	3.91	5	72.25	70.00
2622	.02	5.463	.000	.00	3	79.50	79.50

Bunker Hill Seed CO. Charleston Mass.

Apr. 6, 1903 \$.10

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
340	Cabbage-	
429	Carrot	chaff
330	Cucumber-	
1247	Lettuce-	dirt
1327	Water Melon-	
1540	Onion-	B. seed
1729	Parsnip-	
2143	Radish-	B. seed
2534	Tomatoe	dirt
2629	Turnip-	<p>Packets were all blank except a few which bore the mark of the Somerville nursery of Somerville, Mass.</p>

Bunker Hill Seed CO. Chasleston, Mass.

Apr. 6, 1903.

\$.10

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. P	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. V	Real Value. $\frac{P \cdot V}{100}$
340	.01	.359	.000	.00	2	85.00	85.00
429	.01	.095	.005	5.27	6	17.50	12.00
830	.01	1.56	.000	.000	No test		
1247	.01	.251	.005	.199	4	36.00	35.50
1327	.01	2.693	.000	.000	3	<u>95.60</u>	95.60
1540	.01	.461	.021	.455	9	14.00	14.00
1729	.01	.038	.00	.00	8	.088	.088
2143	.01	.542	.000	.000	2	82.50	82.50
2534	.01	.239	.000	.000	5	67.35	67.35
2629	.01	.625	.000	.000	9	17.50	17.50

Forrest Seed Co., Cortland, N.Y. Mar. 16, 1902 \$.16

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
302	Cabbage-Stone Mason	B.seed
306	Cabbage-Early Jersey Wakefield	B.seed chaff
228	Beet-Dewing's Improved Blood Turnip	
1219	Lettuce-Prize Head	chaff dirt
1312	Muskmelon-Rocky Ford	dirt
1716	Parsnip- Hollow Crown	chaff
2121	Radish- Rosy Gem	B.seed dirt
2415	Squash- Summer Crookneck	B.seed
2520	Tomato- Beauty	
2620	Turnip- Sweet German	B.seed

50c 10 Packages of
Warranted
Vegetable Seeds **For 16c**

Send us 16c and we will send you postpaid one package each of the following: E. B. Turnip Beet, Rosy Gem Radish, Prize Head Lettuce, E. J. Wakefield Late Flat Dutch Cabbage, H. C. Parsnip, Crookneck Squash, Sweet German Turnip, Beauty Tomato. **FREE**—Our illustrated catalogue telling how to get the best seeds that grow for 3c a package.

FORREST SEED CO., 22 Main Street, Cortland, N. Y.

Forrest Seed CO. Cortland N.Y.

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. P	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. V	Real Value. P.V 100
302	.05	5.157	.000	.000	4	64.50	64.50
306	.05	2.895	.145	.500	2	<u>94.00</u>	93.450
228	.05	6.180	.305	4.94	4	<u>186.00</u>	176.00
1219	.012	5.846	.105	1.80	2	<u>97.50</u>	96.25
1312	.016	3.533	.007	.190	3	74.00	74.00
1716	.016	3.396	1.00	2.33	3	63.75	61.990
2121	.016	3.046	.065	.808	2	72.50	72.00
2415	.016	4.545	.062	1.36	4	66.00	65.25
2520	.016	1,708	.000	.00	4	<u>83.50</u>	83.50
2620	.016	7.580	.055	.071	2	<u>91.75</u>	91.75

F. C. Graves, March 12.

\$.25

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
25	Beans- Black Wax	
215	Beet- Mangel Wurtzel	B.seed chaff
314	Cabbage- Early Winningstadt	B.seed
719	Corn (Pop) Ruby King	
1220	Lettuce- Prize Head	chaff cinders
1714	Parsnip- Long Sugar	chaff
1613	Parsley- Long Hamburg	
2014	Pumpkin- Common Yellow	
2111	Radish- White Parsnip	B.seed dirt
2525	Tomato- Dwarf Champion	dirt
	Packets of Flower Seeds	

Fresh Iowa Seeds

For 25c we will send post-
paid 10 packets of
garden seeds and 10 packets of flower
seeds together with our 1903 catalog.

Tested Seed Corn

Our Specialty.

Address

F. C. GRAVES SEED CO., DES MOINES, IA.

F.C.Gra.es, Des Moines, Iowa. Mar.12,1903

\$.25

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
25	.012	6.00	.000	.000	-	44.40	44.40
215	.015	2.698	.005	.135	4	<u>99.25</u>	99.00
314	.022	3.463	.0177	.511	2	76.00	75.00
719	.012	37.80	.000	.00	4	<u>97.75</u>	97.75
1220	.012	5.846	.105	.130	2	<u>97.25</u>	97.25
1614	.012	3.546	.05	.149	7	55.25	54.91
1613	.012	2.399	.000	.000	11	38.00	38.00
2014	.012	7.81	.000	.000	3	84.20	84.20
2111	.012	3.951	.005	.127	5	25.75	25.50
2525	.012	1.731	.043	2.49	5	80.00	78.00

Harry H. Hammond, Bay City, Mich. \$1.00. March 19, 1903. No. 26663

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
13	Beans - Valentine	
24	Beans - Improved Golden Wax	B.seed
209	Beet - Eclipse	B.seed chaff
224	Beet - Crosby's Egyptian	B.seed
315	Cabbage - Jersey Wakefield	B.seed
319	Cabbage - Express	B.seed
320	Cabbage - Winningstadt	B.seed
418	Carrot - Long Orange	chaff dirt
511	Cauliflower - Early Paris	B.seed
608	Celery - White Plume	chaff
713	Corn - Stowell's Evergreen	B.seed
714	Corn - First of All	B.seed
815	Cucumber - White Spine	B.seed 3 stones
819	Cucumber - Early Russian	
902	Egg Plant - Large Purple	B.seed dirt
1215	Lettuce - Hanson	chaff dirt
1223	Lettuce - Forcing	dirt F.seed
1229	Lettuce - Grand Rapids	dirt F.seed
1314	Musk Melon - Rocky Ford	dirt
1316	Musk Melon - Hackensack	
1413	Water Melon - Kolb's Gem	

Harry A. Hammond, Bay City, Michigan, \$1.00 March 19, 1903

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. _P	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. _V	Real Value. $\frac{P \cdot V}{100}$
13	.10	43.00	.000	.000	4	62.00	62.00
24	.10	57.50	.0005	.0094	2	<u>98.00</u>	98.00
209	.05	6.258	.234	3.740	4	<u>166.50</u>	161.00
224	.05	7.543	.158	2.09	4	139.00	135.00
315	.05	4.616	.0402	.872	2	77.50	76.90
319	.05	4.218	.051	1.22	4	51.00	50.40
320	.05	4.196	.015	.358	2	87.00	87.00
418	.05	6.137	.205	3.34	6	34.25	32.86
511	.05	2.003	.019	.95	2	75.00	74.30
608	.05	3.659	.036	.936	11	23.25	23.00
713	.05	43.00	.405	9.42	4	30.00	27.20
714	.05	46.40	.357	7.70	4	47.50	43.80
815	.05	5.023	.0373	.174	2	Ipst	
819	.05	8.359	.000	.000	2	<u>98.00</u>	98.00
902	.05	2.260	.050	.0221	5	<u>79.50</u>	77.70
1215	.05	5.731	.500	.873	2	<u>93.50</u>	84.40
1228	.05	6.736	.193	.287	2	<u>92.75</u>	92.50
1229	.05	6.061	.300	.495	2	18.00	18.00
1314	.05	3.555	.037	1.04	3	<u>97.00</u>	96.50
1316	.05	4.310	.000	.000	3	<u>93.80</u>	93.80
1413	.05	6.060	.000	.000	5	53.10	53.10

2 - Harry H. Hammond, Bay City, Michigan.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
1416	Water Melon - Wonderful	
1517	Onion - Red Wethersfield	
1522	Onion - Improved Globe Danvers	P.seed
1525	Onion - Prize Taker	B.seed
1614	Parsley - Dwarf Curled	F.seed dirt
1719	Parsnip - Long Smooth	chaff dirt
1720	Parsnip - Guernsey	chaff dirt
1813	Pea - Market Garden	B.seed
1814	Pea - Earliest and Best	
1907	Pepper - Ruby King	dirt
2012	Pumpkin - Quaker Pie	B.seed
2113	Radish - Early Deep Scarlet	dirt
2124	Radish - Scarlet Ball	dirt
2013	Pumpkin - Mammoth	B.seed chaff
2125	Radish - Dark Point Red	B.seed
2218	Salsify - Sandwich Island	dirt
2315	Spinach - Victoria	dirt wheat
2316	Spinach - Bloomsdale	B.seed
2412	Squash - Warty Hubbard	B.seed dirt
2417	Squash - Crock Neck	
2524	Tomato - Earliest	dirt F.seed

2- Harry W. Hammond, Bay City, Michigan.

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. P	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. V	Real Value. $\frac{P \cdot V}{100}$
1416	.05	8.975	.000	.000	3	36.75	36.75
1517	.05	4.206	.000	.000	5	62.25	62.25
1522	.05	4.118	.003	.073	7	67.25	67.00
1525	.05	4.263	.003	.074	5	<u>81.25</u>	80 .75
1614	.05	5.91	.063	1.15	9	52.00	51.50
1719	.05	4.170	.22	5.19	8	22.00	20.85
1720	.05	4.040	.116	2.30	8	26.25	25.27
1813	.02	54.00	.363	.681	3	35.00	84.40
1814	.02	58.00	.000	.000	7	30.00	30.00
1907	.05	2.626	.023	.987	10	<u>92.50</u>	81.75
2012	.05	6.76	.215	3.18	3	<u>86.00</u>	83.26
2013	.05	6.789	.185	2.58	2	<u>98.75</u>	97.50
2124	gratis	6.772	.032	.473	2	72.74	72.25
2013	.05	7.430	.075	.101	3	<u>87.50</u>	87.13
2125	.05	6.622	.057	.361	2	76.75	76.00
2218	.05	5.090	.194	3.81	8	44.00	43.75
2315	.05	8.700	.134	1.540	4	74.50	74.00
2316	.05	6.070	.077	1.27	4	<u>79.50</u>	79.00
2412	.05	4.695	.104	2.21	2	55.00	54.00
2417	.05	6.697	.000	.000	6	54.00	54.00
2524	.05	2.493	.023	.923	3	76.00	75.25

3 - Harry N. Hammond, Bay City, Michigan.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
2528	Tomato - Red Trophy	chaff
2614	Turnip - Purple Top Strap Leaf	dirt
2615	Turnip - White Flat Dutch	dirt
2713	Ruta Baga - Purple Top	B.seed
<p data-bbox="534 1038 1208 1134">The following were also received but not tested:</p> <p data-bbox="534 1163 921 1197">Asparagus - Colossal</p> <p data-bbox="534 1226 805 1261">Gourds - Mixed</p> <p data-bbox="534 1290 822 1324">Leek - Champion</p>		

3 - Harry N. Hammond, Bay City, Michigan.

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
2528	.05	3.471	.016	.461	5	<u>93.75</u>	93.25
2614	.05	6.810	.012	.176	2	<u>92.50</u>	92.25
2615	.05	7.190	Trace		2	<u>100.00</u>	100.00
2713	.05	6.836	.094	1.38	2	<u>98.50</u>	98.00

W. J. Haskins

March 11, 1903

\$.10

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
222	Beet- Crosby's Egyptian	B.seed
312	Cabbage- Stone Mason	
419	Carrot- Danver's Half-Long	chaff dirt
818	Cucumber- Long Green	
1218	Lettuce- Prize Head	chaff dirt
1524	Onion- Yellow Globe Danvers	
2120	Radish- Early Scarlet Turnip	B.seed F.seed
2617	Turnip- Improved Purple Top	B.seed dirt
	Nasturtiums Tall	
	Sweet Peas Mixed	

W.J.Haskins, Bringhamton, N.Y., MAR. 11, 1903

\$.10

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
222	.01	2.960	.0952	.322	4	106.00	105.50
312	.05	2.629	.000	.000	5	64.00	64.00
419	.01	2.350	.165	7 1.02	6	55.25	51.14
818	.01	2.135	.000	.00	2	69.00	69.00
1218	.01	2.311	.011	.476	2	88.25	88.00
1524	.01	1.839	.000	.000	6	49.00	49.00
2120	.01	3.897	.050	1.28	2	59.74 4	58.50
2617	.01	8.340	.008	.095	2	83.00	83.00

Iowa Seed Co., Des Moines, Iowa. \$.25. March 13, 1903.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
231	Beet - Edman's Blood Turnip	B.seed
308	Cabbage - Early Jersey Wakefield	B.seed
420	Carrot - Long Orange	F.seed chaff
602	Celery - Giant Pascal	chaff
816	Cucumber - Chicago Pickle	chaff
1224	Lettuce - California Cream Butter	F.seed chaff
1528	Onion - Yellow Globe Danvers	
1715	Parsnip - Hollow Crown	chaff dirt
1918	Pepper - Large Bell	dirt
2126	Radish - Early Long Scarlet Short Top	
2215	Salsify - Sandwich Island	dirt
2313	Spinach - Long Standard	B.seed dirt
2416	Squash - Early Bush Crookneck	dirt B.seed
2521	Tomato - White's Excelsior	dirt
2616	Turnip - Purple Top Globe	B.seed

...Bargain Collections...

...Only 25 Cents Each, Postpaid...

THIS is the 33D ANNIVERSARY of our start in the seed business and we are resolved to have the largest trade that we have ever had. It is our BARGAIN YEAR, and we are almost giving away these collections to secure trial orders, especially from new customers. Our selection of varieties, but all different and all choice. Tell your friends about it.

No. 1—Consists of 15 full size packets of Vegetable seeds, including Lettuce, Radish, Onion, Tomato, Cabbage and a good assortment for the family garden.

No. 14—Consists of one plant each of four kinds of Memorial Roses; hardy and large.

No. 15—Consists of four...

IOWA SEED CO.,
Des Moines, Iowa.

Iowa Seed Co. Des Moines, Iowa.

.25

March 13, 1903.

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. P	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. V	Real Value. $\frac{P \cdot V}{100}$
231	.05	3.071	.7155	3.86	6	133.50	121.50
308	.05	3.966	.029	.732	2	79.00	78.45
420	.05	13.348	1.815	13.60	6	61.00	52.70
602	.05	2.855	.017	.751	11	64.00	63.50
816	.05	6.061	.0011	.018	2	72.50	72.50
1224	.05	6.511	.020	.307	2	<u>97.50</u>	97.25
1528	.05	5.758	.000	.000	4	64.00	64.00
1715	.05	8.505	.030	.36	7	54.00	53.75
1918	.05	3.102	.018	.271	5	<u>75.50</u>	75.00
2126	.05	3.713	.000	.000	2	<u>89.00</u>	88.50
2315	.05	4.150	.022	.53	7	59.50	59.00
2313	.05	14.900	.109	.779	4	<u>83.50</u>	83.00
2416	.05	15.78	.217	1.38	2	<u>96.00</u>	95.00
2521	.05	2.070	.028	1.25	3	72.00	71.00
2618	.05	17.318	.063	.393	2	86.60	86.00

S. M. Isbell Co., Jackson, Mich. Mar. 12 \$.10

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
218	Beet- Five Kinds Mixed	B.seed chaff
310	Cabbage- Five Kinds Mixed	B.seed
1233	Lettuce- Five Kinds Mixed	dirt F.seed
2133	Radish- Seven Kinds Mixed	B.seed dirt
2532	Tomato- Seven Kinds Mixed	dirt F.seed



S.M. Isbell Co., Jackson, Mich. MAR. 12 .10

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{P}{V}$	Real Value. $\frac{P \cdot V}{100}$
313	.02	7.917	.019	.240	4	161.50	161.00
310	.05	3.288	.030	.915	2	71.00	70.00
1233	.02	4.021	.009	.224	3	54.50	52.25
2133	.02	7.838	.074	.939	2	93.00	92.00
2532	.02	2.216	.039	4.02	5	83.50	79.75

E. W. Martz Collection \$.15

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
234	Beet- Forty Day	B.seed
309	Cabbage- Early Jersey Wakefield	
313	Cucumber - Early Frame	chaff F.seed
* 2621	Turnip- Early Milan	
1414	Watermelon- Dixie	
1214	Lettuce- Hanson	
2122	Radish- Rosy Gem	B.seed dirt
1531	Onion- Flat Danvers	
1717	Parsnip- Sugar	
2510 *	Tomato- Stone	chaff dirt



FOR 15c Our Catalog of Seeds and
10 pkts, not mere samples,
but enough for a large family garden.
Early Wakefield Cabbage, Forty Day
Beet, Early Frame Cucumber, Hanson
Lettuce, Dixie Water Melon, Flat Dan-
vers Onion, Sugar Parsnip, Rosy Gem
Radish, New Stone Tomato, Early Mi-
lan Turnip. E. W. MARTZ SEED CO.,
Seed Growers. Grundy Center, Iowa.

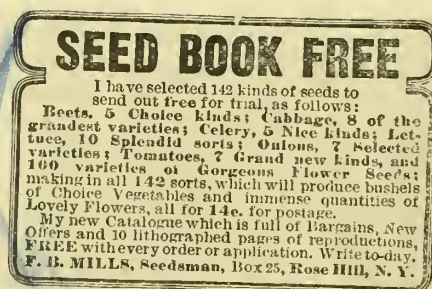
E.W.Martz, Grundy Center, Iowa, \$.15

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
234	.015	2.065	.006	.292	6	<u>147.00</u>	116.75
309	.015	2.565	.000	.000	2	70.50	70.50
813	.015	2.145	.0105	.489	2	63.00	63. 00
1214	.015	.389	.000	.000	2	<u>87.50</u>	87.50
1414	.015	3.41	.000	.000	3	47.70	47. 20
1531	.015	1.97	.000	.000	5	17.00	17.00
1717	.015	1.250	.000	.000	10	23.00	23.00
2122	.015	2.426	.0125	.314	2	35.50	35.25
2510	.015	.981	.013	.144	5	69.00	68.75
2621	.015	1.110	.002	.180	2	<u>92.00</u>	92.25

F.B. Mills, Rose Hill, N.Y.

\$.14

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
307	Cabbage- Ten Sorts	B.seed
604	Celery- Five Sorts	chaff F.seed
239	Beet- Five Sorts	B.seed
1234	Lettuce- Ten Sorts	dirt chaff
1534	Onion- Seven Sorts	B.seed
2530	Tomato-Seven Sorts	dirt
	Flower seeds 100 Kinds Mixed	



F.B.Mills, Rose Hill, N.Y.

\$.14

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
307	.04	3.107	.0245	.79 ₅	2	76.50	75.90
604	.02	1.096	.015	1.38	14	<u>65.25</u>	64.30
239	.02	8.935	.1150	1.62	6	114.00	113.00
1234	.02	5.236	.015	.287	2	<u>90.50</u>	90.00
1534	.02	6.051	.016	.264	9	21.75	21.50
2530	.02	.241	.000	.000	5	<u>87.00</u>	87.00

Missouri Valley Seed Co., St. Joseph, Mo.

\$.50

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
113	Beans- Burpee's Bush Lima	
14	M. V. Stringless Green Pod	B.seed
232	Beet- Early Blood Turnip	B.seed stone
330	Cabbage- Early Jersey Wakefield	B.seed
332	Cabbage- Late Flat Dutch	
422	Carrot- Denver's Half-Long	chaff F.seed
613	Celery- Golden Self Branching	stems
716	Corn- Early Minnesota	
814	Cucumber- Long Green	B.seed
1217	Lettuce- Cal. Cream Butter	chaff dirt
1223	Lettuce- Early Curled Simpson	dirt
1315	Muskmelon- Rocky Ford	
1415	Watermelon- Finny's Early	
1516	Onion- Red Wethersfield	B.seed
1619	Parsley- Moss Curled	chaff F.seed
1713	Parsnip- Hollow Crown	chaff dirt
1815	Peas- First and Best	
1904	Pepper- Ruby King	B.seed
2112	Radish- Rosy Gem	B,seed dirt
2115	Radish- Long Scarlet Short Top	B.seed

Missouri Valley Seed Co., ST. Joseph, MO. \$.50

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. P	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. V	Real Value. $\frac{P \cdot V}{100}$
113	.02	27.80	.000	.000	11	40.00	40.00
14	.02	53.00	.2403	.453	2	84.00	83.61
232	.02	10.470	.350	3.33	6	148.50	143.00
330	.02	3.326	.000	.00	5	33.25	33.25
332	.02	3.360	.0411	1.06	5	47.00	46.50
422	.02	2.120	.050	2.47	6	23.50	22.43
613	.02	4.037	.011	.273	14	<u>63.00</u>	63.00
716	.02	56.80	.000	.000	4	74.50	74.50
814	.02	4.209	.0075	.178	2	23.00	23.06
1217	.02	9.336	.350	.404	2	80.25	80.00
1223	.02	4.101	.020	.433	2	84.00	83.50
1315	.02	4.417	.000	.000	3	75.00	75.00
1415	.02	5.51	.000	.000	3	<u>96.00</u>	96.00
1516	.02	3.814	.009	.236	7	29.25	29.00
1619	.02	6.116	.055	.921	12	27.50	27.00
1713	.02	12.122	.015	.125	10	61.00	61.50
1815	.02	66.50	.000	.000	7	<u>90.00</u>	90.00
1904	.02	3.391	.051	1.50	7	54.50	53.00
2112	.02	7.49	.190	2.66	2	<u>97.25</u>	96.50
2115	.02	5.280	.035	1.61	2	<u>92.25</u>	92.00

2- Missouri Valley Seed Co., St. Joseph, Mo.

\$.50

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
2116	Radish- White Strassburg	B.seed dirt
2411	Squash- Warty Hubbard	
2523	Tomato- Matchless	dirt
2616	Purple Top Flat	B.seed



2- Missouri Valley Seed CO., St. Joseph, Mo.

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
2116	.02	5.126	.015	.293	2	79.25	79.00
2411	.02	4.590	.000	.000	2	<u>90.00</u>	90.00
2523	.02	1.504	.016	1.10	5	80.50	79.50
2616	.02	17.318	.068	.393	2	<u>99.00</u>	98.50

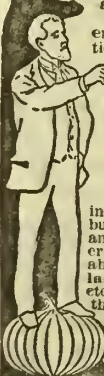
J. A. Salzer, LaCrosse, Wis. March 12, 1903 \$.16

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
235	Beet- Twenty Kinds Mixed	B.seed
305	Cabbage- Twenty-five Kinds Mixed	B.seed
421	Carrot- Fifteen Kinds Mixed	chaff
1235	Lettuce- Twenty five Kinds Mixed	dirt
1530	Onion- Twenty-five Kinds Mixed	
2132	Radish- Twenty Five Kinds Mixed	B.seed
0000	Flower Seeds Seventy-five Sorts	

210 Kinds for 16c.
 It is a fact that Salzer's seeds are found in more gardens and on more farms than any other in America. There is reason for this. We own and operate over 5000 acres for the production of our choice seeds. In order to induce you to try them we make the following unprecedented offer:

For 16 Cents Postpaid
 25 sorts wonderful onions,
 25 sorts elegant cabbage,
 15 sorts magnificent carrots,
 25 peerless lettuce varieties,
 25 rare luscious radish,
 20 splendid beet sorts,
 75 gloriously beautiful flower seeds,
 in all 210 kinds positively furnishing bushels of charming flowers and lots and lots of choice vegetables, together with our great catalogue telling all about Macaroni Wheat, Billion Dollar Grass, Teosinte, Bromus, Speltz, etc., all for only 16c. in stamps and this notice.

Onion seed at but 60c. a pound.
JOHN A. SALZER SEED CO.,
 La Crosse, Wis.



J.A.Saizer, La Cross, Wis.

March 12, 1903

\$.16

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
235	.02	2.0167	.0157	.735	6	134.00	133.50
305	.02	4.068	.063	1.53	4	63.50	62.50
421	.02	1.728	.005	2.89	6	54.25	53.85
1235	.02	3.889	.05	1.29	2	92.25	91.25
1530	.02	4.223	.000	.000	54	66.25	66.25
2132	.02	5.243	.079	1.51	2	72.00	71.50

Templin Bros., Calla, Ohio. Mar. ,1903. \$.50

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
22	Bean-Earliest Red Valentine,	
225	Beet-Crosby's Improved Red Egyptian,	B.seed
311	Cabbage- Early Varieties mixed,	B.seed
317	" Late Varieties mixed,	sand
424	Carrot-Danver's Orange,	chaff F.seed
510	Cauliflower- Early Favorite,	
611	Gelery- New Giant Pascal,	chaff
715	Corn- First of All,	B.seed
817	Cucumber- Jersey Pickle,	dirt
903	Eggplant- Three Choice varieties mixed,	B.seed stones
907	" Three choice varieties mixed,	dirt stones
1213	Lettuce- Improved Hanson,	chaff dirt
1318	Muskmelon- Several Best Varieties,	dirt
1411	Watermelon- Wonderful Sugar,	
1523	Onion- Yellow Globe Danvers,	B.seed
1612	Parsley, Champion Moss Curled,	chaff dirt
1721	Parsnip- Improved Gurnsey,	
1812	Peas- Henderson's First of ALL,	
1919	Pepper- Mixed,	B.seed stones
2131	Spinach- All Seasons Mixed,	B.seed
2314	new Long Standing,	dirt F.seed

Templin Bros., Calla, Ohio. $\frac{1}{2}$.50

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. P	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. V	Real Value. $\frac{P \cdot V}{100}$
22	.02	51.50	.000	.00	2	<u>96.00</u>	96.00
225	.02	19.464	.0952	.483	4	112.50	112.00
304 311	.05	5.509	.011	.02	2	78.00	78.00
317	.05	5.722	.020	.353	2	<u>90.00</u>	90.00
424	.02	5.589	.025	.447	6	<u>87.25</u>	86.50
510	.05	.793	.000	.000	2	78.00	78.00
611	.05	4.054	.030	1.97	11	<u>32.00</u>	32.30
715	.02	12.00	.100	.457	6	56.00	55.50
817	.02	4.666	.007	.015	2	83.25	83.00
903	.03	1.758	.038	.0211	5	64.50	63.10
907	.03	1.601	.041	.0256	5	58.00	56.50
1212	.02	6.286	.100	.623	2	83.25	83.25
1318	.02	9.100	.011	.121	3	72.50	72.50
1411	.02	12.92	.000	.000	2	68.40	68.40
1523	.02	7.056	.006	.085	6	77.56	76.75
1622	.02	4.312	.010	.431	11	38.00	38.00
1721	.02	17.200	.096	.557	10	<u>72.25</u>	71.27
1812	.02	59.50	.000	.000	7	90.00	90.00
1919	.02	2.945	.095	3.22	14	26.50	25.60
2131	.02	10.032	.097	.97	2	70.25	69.50
2314	.02	8.640	.123	1.42	4	<u>95.00</u>	94.50

2- Templin Bros., Calla, Ohio. \$.50

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
2413	Squash- Giant Summer Crookneck,	dirt
2529	Tomato- Six Large smooth sorts, Turnip	chaff
2613	Ruta Baga Purple Top Strap Leaf,	

2- Templin Bros., Caila, Ohio. $\frac{1}{2}$.50

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
2413	.02	4.450	.032	.719	2	<u>96.00</u>	96.00
2529	.02	2.901	.015	.517	5	75.25	75.00
2613	.02	11.362	.00	.00	2	<u>89.75</u>	89.75

Wernich Seed Co., 27 Juneau Ave., Milwaukee, Wis.

Sample Number.	<div>March 13, 1903 \$.10</div> <div>Name of variety and of dealer appearing on packet.</div>	Nature of impurities.
20	Beans-Golden Wax	
211	Beet- Eclipse	B.seed chaff
2114	Radish- Scarlet Turnip	B.seed dirt
	Asters- Tall Branching	
	Hollyhock Mixed	
	Zinnia Mixed	

Class V.

C h i c a g o D e p a r t m e n t S t o r e s .

Boston Store, Chicago, Illinois.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
34	Bean - Valentine	
36	Bean - Valentine	B.seed
121	Bean - Henderson's Bush Lima	
243	Beet - Eclipse	B.seed
245	Cabbage - Early Jersey Wakefield	F.seed
432	Carrot -	chaff F.seed
523	Cauliflower - Early Erfurt	B.seed
631	Celery - Boston Market	chaff
731	Corn - Stowell's Evergreen	
734	Corn - Stowell's Evergreen	B.seed
833	Cucumber - Early White Spine	
918	Egg Plant - New York Improved	F.seed
1019	Endive - Curled	dirt F.seed
1251	Lettuce - Simpson's Black Seeded	dirt F.seed
1330	Musk Melon - Green Nutmeg	
1428	Water Melon - Kolb's Gem	
1543	Onion - Large Wethersfield	
1628	Parsley - Moss Curled	dirt
1734	Parsnip - Hollow Crown	chaff
1830		
1832	Pea - McLean's Little Gem	B.seed

Boston Store, Chicago, Illinois.

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. P	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. V	Real Value. P.V 100
34	.01	23.00	.000	.000	3	88.00	88.00
36		22.00	.102	.464	2	<u>96.00</u>	95.50
121		27.50	.000	.000	4	64.10	64.10
243		6.495	.2157	3.32	6	120.00	116.00
345		1.543	.004	.26	2	52.50	52.00
432		3.800	.845	22.20	6	41.50	32.65
523		.465	.0040	.860	4	50.00	50.00
631		1.721	.005	.291	12	<u>82.75</u>	82.50
731		26.00	.000	.000	4	60.00	60.00
734		27.80	.092	.331	4	60.00	60.00
833		3.156	.000	.000	6	33.00	33.00
918		1.018	.014	1.33	6	59.00	59.00
1019		3.346	.058	1.73	2	57.50	56.75
1251		3.591	.054	1.50	2	<u>89.00</u>	88.75
1330		70037	.000	.000	5	26.00	26.00
1428		5.500	.000	.000	3	<u>93.90</u>	93.90
1543		3.142	.000	.000	6	43.25	43.25
1628		3.256	.004	.123	9	43.25	43.25
17							
34		4.115	.075	1.86	10	33.00	31.40
1830		34.00	.000	.000	10 7	73.00	73.00
1832		28.00	.175	.625	7	<u>93.00</u>	97.50

2 - Boston Store, Chicago, Illinois.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
1923	Pepper - Sweet Mountain	
2145	Radish - French Breakfast	
2221	Salsify - Mammoth Sandwich Island	dirt F.seed
2332	Spinach - Round or Summer	B.seed dirt
2430	Squash - Summer Golden Crookneck	
2540	Tomato - New Stone	dirt
2633	Turnip - Purple Top Strap Leaf	B.seed
2719	Ruta Baga - Shirving's Purple Top	B.seed

2- Boston Store, Chicago, Illinois.

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
1923	.01	1.533	.000	.000	6	34.00	34.00
2145		2.172	.032	1.35	2	75.50	75.00
2221		2.921	.024	.822	7	45.50	44.75
2332		7.065	.124	1.76	8	66.50	64.75
2430		6.179	.000	.000	4	82.00	82.00
2540		2.036	.008	.394	5	87.75	87.50
2633		5.200	.003	.057	2	93.25	93.00
2719		4 .702	.036	.757	4	24.50	23.75

"The Fair", Chicago, Illinois.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
29	Bean - Refugee	
31	Bean - Refugee	
242	Beet - Early Blood Turnip	B.seed
344	Cabbage - Early Jersey Wakefield	
431	Carrot - Danver's Half Long	chaff F.seed dirt
630	Celery - Golden Self Blanching	F.seed
727	Corn - Cory	
729	Corn - Cory	B.seed
834	Cucumber - Long Green	
920	Egg Plant - New York Improved	
1020	Endive - Green Curled	
1119	Kohl Rabi - White Vienna	B.seed dirt
1252	Lettuce - Early Curled Simpson	
1333	Musk Melon - Osage	
1427	Water Melon - Vick's Early	
1542	Onion - Yellow Globe Danvers	B.seed
1627	Parsley - Hamburg	dirt F.seed
1733	Parsnip - Long Smooth	chaff
1925	Pepper - Large Bell	
2144	Radish - French Breakfast	
2222	Salsify - Mammoth Sandwich Island	

"The Fair" Chicago, Illinois.

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. P	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. V	Real Value. $\frac{P \cdot V}{100}$
29	.01	25.00	.000	.000	3	<u>92.00</u>	92.00
31		27.00	.494	.18	2	83.00	8.30
242		3.893	.088	2.26	6	144.00	142.00
344		2.272	.000	.000	2	70.00	76.00
431		2.438	.115	4.78	6	42.00	40.00
630		1.678	Trace		10	<u>69.75</u>	69.75
727		27.70	.000	.000	4	83.00	83.00
729		29.00	.055	.079	4	<u>89.00</u>	88.00
834		3.363	.000	.000	6	38.00	38.00
920		.61	Trace		6	25.50	25.50
1020		1.557	.000	.000	4	65.25	65.25
1119		2.116	.021	.995	6	9.00	8.75
1252		.821	.000	.000	2	78.25	78.25
1333		2.315	.000	.000	3	84.00	84.00
1427		2.907	.000	.000	5	72.00	72.00
1542		1.788	.001	.071	5	70.50	70.50
1627		2.941	.026	.884	9	27.75	27.00
1733		2.075	.050	2.41	7	56.75	55.50
1925		1.06	Trace		10	44.00	44.00
2144		3.066	.029	.96	2	72.00	71.00
2222		.930	.000	.000	7	42.95	42.95

2 - "The Fair", Chicago, Illinois.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
2330	Spinach - Round or Summer	dirt B.seed
2429	Squash - Summer Golden Crookneck	
2539	Tomato - Acme	skin F.seed
2634	Turnip - Purple Top Strap Leaf	

2-" The Fair " Chicago, Illinois.

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{p}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
2330	.01	6.955	.055	.791	4	70.50	69.75
2429		2.815	.000	.000	2	71.00	71.00
2539		1.870	.011	.538	5	84.50	84.50
2634		2.140	.000	.000	2	68.50	68.50

Siegel Cooper, Chicago, Illinois.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
27	Bean - Early Mohawk	B.seed
28	Bean - Early Mohawk	B.seed
32	Bean - Early Refugee	B.seed
35	Bean - Early Mohawk	B.seed
122	Bean - King of the Garden Lima	
244	Beet - Eclipse	B.seed
346	Cabbage - Early Jersey Wakefield	F.seed
430	Carrot - Denver's Half Long	chaff F.seed dirt
524	Cauliflower - Early Snowball	
632	Celery - White Plume	
728	Corn - Stowell's Evergreen	B.seed
730	Corn - Stowell's Evergreen	
332	Cucumber - Early White Spine	
921	Egg Plant - New York Improved	
1018	Endive - Green Curled	dirt wheat
1120	Kohl Rabi - White Vienna	B.seed F.seed
1253	Lettuce - Grand Rapids	dirt
1332	Musk Melon - Osage	B.seed pulp
1426	Water Melon - Kolb's Gem	
1544	Onion - Large Wethersfield	
1626	Parsley - Double Curled	chaff

Siegel Cooper, Chicago Illinois.

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
27	.01	22.00	2.185	9.82	2	<u>94.00</u>	84.70
28		26.50	.058	.221	2	<u>96.00</u>	95.80
32		24.50	.000	.000	3	<u>90.00</u>	90.00
35		24.00	.205	.855	3	<u>96.00</u>	95.15
122		22.00	.000	.000	4	20.00	20.00
244		6.92	.2748	3.97	6	117.00	113.50
346		2.045	.0152	.742	2	58.00	58.00
430		3.007	.2200	7.330	6	58.75	54.70
524		.486	.000	.000	3	58.00	58.00
632		1.734	Trace		9	<u>64.75</u>	64.75
728		21.20	.235	1.35	4	62.00	61.10
730		18.50	.000	.000	4	74.00	74.00
832		3.048	.000	.000	4	33.00	33.00
921		.745	.000	.000	7	58.65	58.65
1018		3.401	.1062	1.82	2	60.00	59.50
1120		1.728	.007	.407	2	<u>86.50</u>	83.25
1253		3.428	.014	.410	4	<u>92.50</u>	91.75
1332		6.736	.038	.565	3	40.00	40.00
1426		6.568	.000	.000	6	2.00	2.00
1544		3.32	.000	.000	6	60.50	60.50
1626		3.396	.008	.236	11	24.75	24.50

2 - Siegel Cooper, Chicago, Illincis.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
1735	Parsnip - Hollow Crown	chaff
1924	Pepper - Sweet Mountain	
2146	Radish - Chartiers	
2223	Salsify - Mammoth Sandwich Island	dirt
2329	Spinach - Round or Summer	B.seed
2428	Squash - Golden Summer Crookneck	
2538	Tomato - New Stone	dirt
2635	Turnip - Purple Top Strap Leaf	B.seed
2720	Ruta Baga - Shirving's Purple Top	B.seed

2-Siegel **Opper** Chicago, Illinois.

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
1735	.01	4 .200	.035	.870	8	24.75	24.00
1924		1.537	.000	.000	14	15.00	15.00
2146		3.721	.028	1.753	2	60.75	60.00
2223		2.277	.019	.857	7	46.87	46.00
2379		6.84	.098	1.43	4	59.50	58.75
2428		5.795	.000 ?	.000	2	68.00	68.00
2538		1.899	.008	.533	6	86.50	86.00
2635		5.438	.000	.000	3	71.00	71.00
2720		5.183	.053	1.10	4	1 .75	1.00

Rothchild, Chicago, Illinois.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
30	Bean - Early Refugee	B.seed
33	Bean - Early Refugee	B.seed
118	Bean - Henderson's Bush Lima	
120	Bean - Henderson's Bush Lima	
245	Beet - Eclipse	chaff
343	Cabbage - Henderson's Early Summer	B.seed F.seed
433	Carrot - Early Scarlet Short Horn	chaff F.seed dirt
525	Cauliflower - Early Snowball	sand
633	Celery - White Plume	chaff
732	Corn - Stowell's Evergreen	
733	Corn - Stowell's Evergreen	B.seed
835	Cucumber - Early White Spine	
919	Egg Plant - New York Improved	B.seed
1121	Kohl Rabi -	B.seed dirt
1250	Lettuce - Simpson's Black Seeded	dirt F.seed
1329	Musk Melon - Green Nutmeg	
1429	Water Melon - Dixie	
1545	Onion - Early Red Flat	
1625	Parsley - Double Curled	chaff F.seed
1732	Parsnip - Hollow Crown	chaff
1829	Pea - McLean's Little Gem	

Rothchild-Chicago, Illinois,

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
30	.01	26.00	.079	.304	3	68.00	66.30
33		24.00	.055	.029	3	68.00	66.30
118		23.00	.000	.000	4	74.00	74.00
120		26.00	.000	.000	6	77.60	77.60
245		7.080	.0595	.841	6	145.00	144.50
343		4.566	.017	.384	2	67.50	67.00
433		3.300	.200	5.44	4	39.75	37.82
525		.523	.022	4.26	3	40.00	38.30
633		1.809	.005	.276	9	<u>81.75</u>	81.50
732		29.00	.000	.000	4	65.00	65.00
733		18.13	.055	.023	4	57.00	57.00
835		3.363	.000	.000	2	63.00	63.00
919		.981	Trace		8	64.50	64.50
1121		2.149	.01	.0214	2	<u>90.50</u>	90.25
1250		3.661	.028	2.13	2	<u>88.25</u>	88.00
1329		6.422	.000	.000	3	83.50	83.50
1429		5.818	.000	.000	3	<u>92.00</u>	92.00
1545		3.671	.001	.0367	6	49.75	49.75
1625		3.691	.009	.237	11	27.50	27.50
1732		3.77	.050	1.36	8	<u>21.75</u>	21.00
1829		33.00	.000	.000	7	72.00	72.00

2 - Rotchild, Chicago, Illinois.

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
1831	Pea - McLean's Little Gem	B.seed
1926	Pepper - Sweet Mountain	B.seed chaff
2147	Radish - Chartiers	
2224	Salsify - Mammoth Sandwich Island	
2331	Spinach - Round or Summer	B.seed dirt
2431	Squash - Summer Golden Crookneck	
2537	Tomato - Stone	dirt radish seed
2636	Turnip - Purple Top Strap Leaf	
2718	Ruta Baga - Shirving's Purple Top	B.seed

2-Rothchild, Chicago, Illinois.

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
1831	.01	35.00	.150	.429	7	84.00	83.25
1926		1.960	.005	2.88	5	69.00	67.70
2147		3.669	.044	1.19	2	74.00	74.00
2224		1.559	.000	.000	7	47.47	47.47
2331		6.587	.167	2.54	4	68.00	65.50
2431		4.510	.000	.000	2	<u>96.00</u>	96.00
2537		1.500	.015	1.00	5	83.75	83. 75
2636		4.940	.000	.000	3	64.00	64.00
2718		5.211	.024	2.29	2	36.00	34.50

Class VI.

U n i t e d S t a t e s D i s t r i b u t i o n .

U. S. Distribution, March 5, 1903

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
221	Beet- Extra Early Egyptian	B.seed chaff
812	Cucumber- Arlington's White Pine	chaff
1225	Lettuce- Morse	dirt chaff
2123	Radish- Long Scarlet Short Top	B.seed
21	Bean- Early Red Valentine	

U.S. Distribution, March 5, 1903

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. $\frac{P}{V}$	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. $\frac{V}{V}$	Real Value. $\frac{P \cdot V}{100}$
221	gratis	7.015	.0415	.592	4	142.00	142.00
812	" "	4.163	.009	.216	2	76.00	76.00
1225	"	3.626	.045	1.25	2	<u>92.50</u>	91.50
2123	"	6.591	.074	1.120	2	<u>99.75</u>	99.25
21	"	34.00	.000	.000	No Test.		

Old Seeds From Champaign May's 1902

Sample Number.	Name of variety and of dealer appearing on packet.	Nature of impurities.
23	Bean- Dwarf Black Wax	B.seed
512	Cauliflower- Snowball	B.seed
695	Celery- White Plume	F,seed dirt
717	Corn- Cory	B.seed
1116	Kohl Rabi Early White	dirt
1816	Peas- Champion Of England	
2217	Salsify- Sandwich Island	dirt

Old Seeds From Champaign

May's 1902

Sample Number.	Retail price per Packet.	Weight of contents of packet in grams.	Weight of impurities in packet in grams.	Per cent. of impurities by weight. P	One-half sample sprouted in days.	Average per cent. sprouting in 14 days. V	Real Value. $\frac{P \cdot V}{100}$
23	.05	35.50	.3678	1.03	0	00.000	
512	.05	.631	.004	.634	8	29.00	23.50
605	.05	2.069	.038	1.33	0	00.00	
717	.05	23.50	.035	.298	6	73.00	73.00
1116	.05	4.419	.0385	.0873	6	4.50	4.25
1816	.05	39.00	.000	.00	7	51.00	51.00
2211	.05	4.638	.079	1.70	0	00 00	

C o n c l u s i o n s .

DISCUSSION OF RESULTS.

- Introduction -

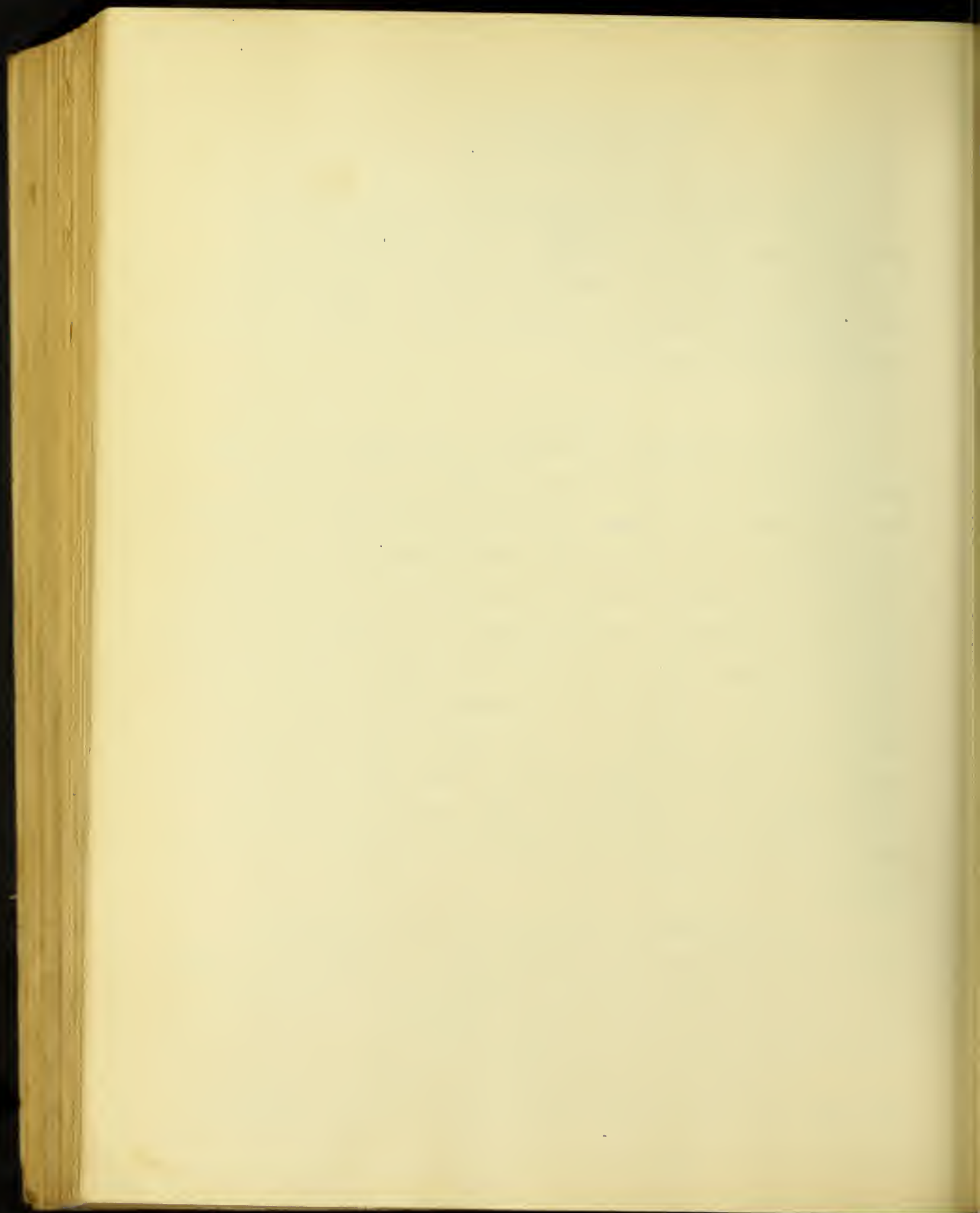
The object of this investigation of retail vegetable seeds is to determine the character of the packet seed and the value of the "Tested Seed" card in the catalog. Three phases of seed testing were undertaken to determine this character; they are Quantity, Viability, and Purity.

- Quality -

From the external appearance of the packet little idea can be obtained as to the quantity or quality of the contents. When the packets were opened, the content weighed and photographed, an interesting study is presented. Note the decline in quantity as shown in photograph from left to right up to the time where ^a new price section commences, and notice here that a sample is sometimes offered at a lower price of nearly the same size as that of a preceding division. The variation in groups will be found to be only apparent, as a study of the real value of the seed will indicate. The sample which now heads the group may be worth only as much as that of the samples at the lower end, if the real value were considered. Quantity and quality do not appear to work well together.

In the packets from the same firm the difference is slight where an automatic bag filling machine is used, but in cases where the seed is still measured by means of spoons of various sizes the quantities are not as uniform.

In glancing at these results you must carry in mind at all times that the seed were sold by each of the six classes with



a little different object in view. The cheap offers were inducements to secure the names of the public and the seeds were simply a means of obtaining them. The seeds from the Chicago Department store were obtained at a uniform rate of one cent per package, but they had no expense for packing and postage and could therefore be sold at a much lower rate. The seeds from the commission box had to bear the expense of freight and commission, the other classes have their particular reasons which regulate the quantity of seeds per package. Hence we must not judge hastily of the quantity of seed.

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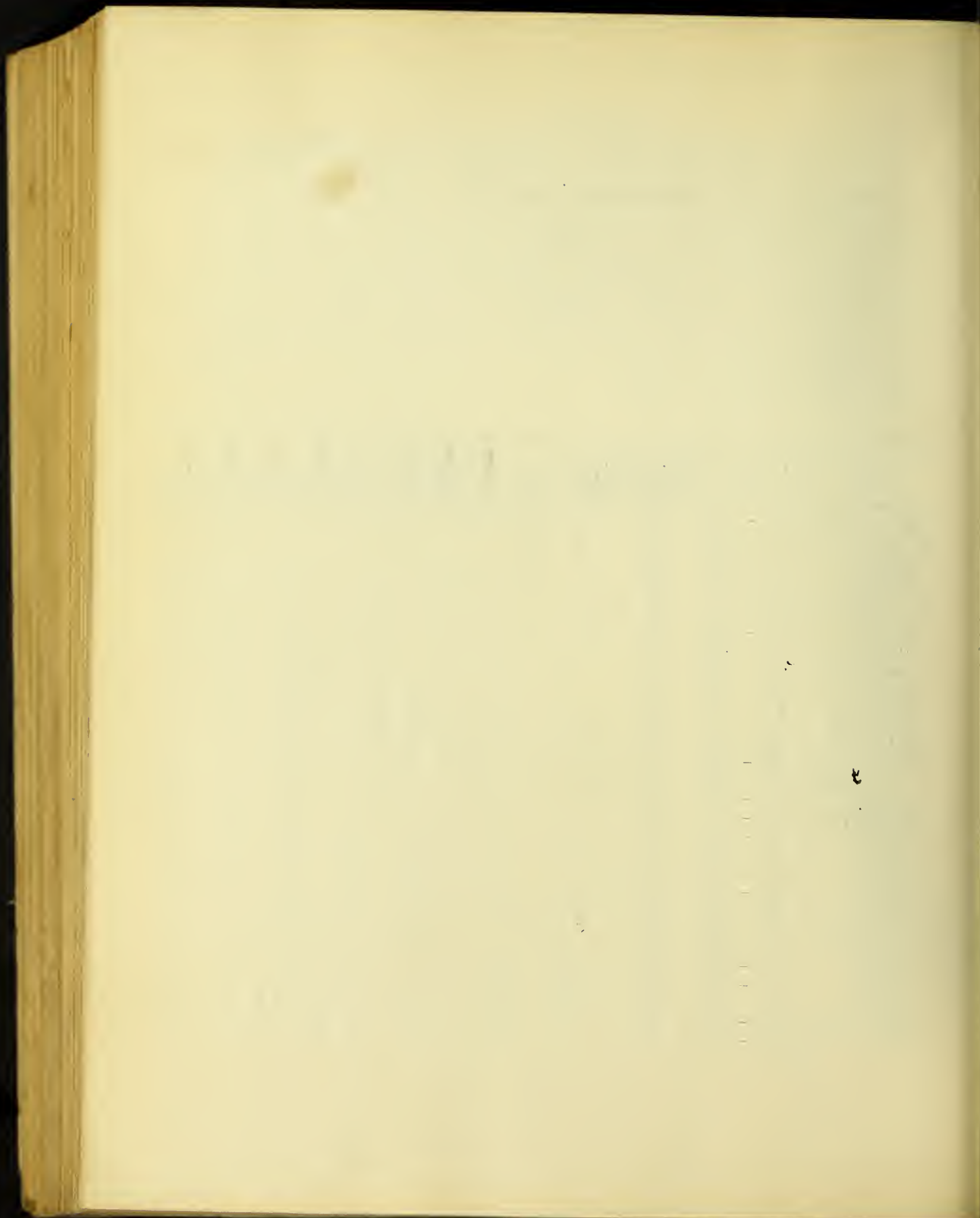
In the tables commencing on page 195 and running to page 330 will be found a summary of the results from each seedman. Little can be said regarding the superiority of one seedman over another, but the impression of the writer is that more is received for the money from a recognized dealer than from a cheap newspaper ad. In regard to seeds from the commission boxes and seed ordered from the store the latter are much the preferable, and gave the best results in most cases. If it is desired to compare the seeds from each source the data will be found on page 238 to page 265.

1200

- Viability -

The following table is arranged to show the standard recommended by the United States Department of Agriculture. The number of samples which were tested of each variety and those coming up to the desired standard. The last columns are arranged to show the number of samples germinating of that variety at or over the percent at the head of the column. The percentages below 55 were omitted from the table.

SEED	U.S.D.A. STANDARD	No. of SAMPLES TESTED	No. of SAMPLES STANDARD	PERCENT OF GERMINATION.								
				95	90	85	80	75	70	65	60	55
Bean	90 - 95	35	19	9	10	2	1	1	0	5	2	0
Bean Lima	90 - 95	20	0	0	0	0	0	0	0	0	0	0
Beet	150	45	24									
Cabbage	90 - 95	46	7	2	5	7	7	6	2	1	6	2
Carrot	80 - 85	33	7	0	1	2	4	0	2	0	2	5
Cauliflower	80 - 85	25	10	1	1	2	6	3	3	1	1	1
Celery	60 - 65	33	22	0	2	2	4	3	2	5	4	3
Corn	85 - 90	34	3	1	0	2	2	3	6	3	3	6
Cucumber	85 - 90	35	8	6	1	1	3	5	1	2	3	1
Egg Plant	75 - 80	21	1	0	0	0	0	1	0	2	1	6
Endive	89 - 94	20	1	0	1	2	4	2	2	2	1	2
Kohi-Rabi	83 - 88	21	12	4	3	4	2	2	0	0	0	0
Lettuce	85 - 90	53	32	11	15	6	6	3	0	0	1	1
Melon Musk	85 - 90	35	17	6	4	7	3	3	3	1	1	0
Water	85 - 90	29	5	1	2	2	4	6	3	2	1	0
Onion	80 - 85	45	4	0	2	0	2	2	4	6	4	3
Parsley	70 - 75	28	5	1	0	1	0	1	2	1	2	0
Parsnip	70 - 75	35	6	0	0	0	0	2	4	2	7	3
Peas	93 - 98	32	8	3	5	6	3	3	3	1	2	1
Pepper	71 - 76	26	9	0	0	2	2	4	1	3	2	1
Pumpkin	85 - 90	16	11	3	3	5	1	0	0	0	2	0
Radish	90 - 95	47	16	10	6	11	4	4	6	0	2	1
Salsify	75 - 80	24	7	0	0	1	4	2	0	2	2	1
Spinach	80 - 85	32	9	1	0	3	5	2	7	5	1	1
Squash	85 - 90	31	16	11	4	1	3	0	2	2	1	1
Tomato	85 - 90	40	15	2	5	8	7	7	3	3	1	1
Turnip	90 - 95	36	20	12	8	6	3	1	1	1	1	0
Ruta - Baga	90 - 95	20	7	5	2	1	1	2	1	1	0	0
Cress	85 - 90	10	4	3	1	0	0	0	0	0	0	0



In looking over the results of the germination test as shown in the preceeding table it will be seen that the percentages cover a wide range. The ratio of the number of tests to samples reaching the standard set by the United States Department of Agriculture is about 9 to 3. This is not a fair ratio because of the extremely poor ratio of Lima Beans, Corn, and Peas due to poor tests. If these are not included the ratio is 8 to 3. It will be remembered that in the discussion of standards it was stated that a working standard must be formed for the seed of each year's crop, but there are not sufficient results here to form any such standard so we must compare with those of the United States Department of Agriculture.

Shortage of 1902 crop in regard to vine seeds do not seem to have affected the quality of the stock sold in 1903 as much as would be expected, the ratio being a little better for vine crop than for the seeds as a whole.

How this shortage of seeds was met does not appear, as we have no basis to determine the quantity of seeds per packet in previous years. Another method more likely to be followed is to use old stocks of vine seed. These seeds as a class retain their vitality for two or three years, and improve with age, so the shortage would not be felt for a year or two after the failure.

One of the factors affecting the vitality of seeds is the method of handling, and in this connection it is interesting to note the condition of the packages in which the seeds were received. Some orders were received in neat, trim packages, and others were packed in sacks or envelopes which were not strong enough to bear shipping. One example of each will be sufficient. From one firm was received a well packed box lined with cotton



batting and packed very solidly so that every thing was in good shape. The package received in bad shape was packed in a catalog envelop and before it reached the Urbana post office had become unfastened and the clerk reported all the seeds loose in the mail pouch. A few packets were missing and had to be replaced.

In the seed packets there was a wide range of sizes and general style. They ranged from packets with the name of the variety written in ink with no designation of the firm to the brightly lithographed packets of the commission man. Again the envelopes varied in texture from cloth like paper in the case of an expensive seed to thin paper and others. Size also varies; in an examination of the size of lettuce packets they were found to vary from 2" x 3" up to 3" x 4 1/2" excluding an ounce packet.

While the half pint sacks were of a more uniform type, there was a wide variation. Yellow grocery sacks with the variety named in lead pencil and tied with a long piece of cotton string was one form, and the neat, trim, flat envelop was another. In the case of the sacks (yellow grocery sacks) it may be stated that they were weak and on their receipt had allowed their content to become well mixed with their neighbors.

In the case of the seeds purchased from the commission box in Champaign and those received from the order sent to the same firm, it is of interest to note the different style of packet in one case. That from the box was brightly colored, while the packet from the order was very simple.

This whole matter of packages and packets seems to be a personal matter with each dealer, but it certainly pays to have the order reach the purchaser in good condition, rather than with the seed mixed or leaking out.

Under the head of Viability comes up the question of the seedman's liability for damages due to seeds of poor viability. The public is willing to over-look some faults in seed such as a variation in quantity and a small percent of impurities, but seeds which will not grow are not to be tolerated long. Often the planter in condemning seeds overlooks the fact that he may not have given proper conditions for a particular kind of seed.

Warranties and Seed Law.- There are three conditions of germination: heat, oxygen, and moisture. However different classes of seeds require different conditions and treatment. Even after the seed sprouts the soil conditions may be such that it can not grow, and this may be due to planting too deep, too shallow, in too dry or too wet a soil. The soil temperature may not be just right. For example, such seeds as peas and onions will germinate at a temperature of 45 degrees Fahrenheit and other seeds of more tropical nature such as corn and melons require a temperature of 70 degrees Fahrenheit. Plants are subject to drouth, fungus diseases, attacks by insects, and climatic conditions. When plants have to strive constantly for an existence, is it strange that seedsmen place in their catalog a disclaimer in which they refuse to be liable for the crop or to insure the germination of the seed? The seedsman is compelled to do this because the results are beyond his control. He may test his seed and know that they are all right and true to name, when he sells them, but there he disclaims all responsibility for the crop. Does it seem right that he should be released from all this responsibility? Should he not say that his seeds are true to name and that about a certain percentage will grow under ideal conditions. The gardener plants the seed and expects a fair stand. Why can not the seedsman help him to some

idea of the amount of seed he should plant? His tests will show that about a certain percent will germinate under certain (presumably favorable) conditions, and it may be well to plant double the ordinary quantity or only three fourths the ordinary amount.

In an attempt to determine what the seedsmen ^{warrant} ~~went~~, fifty seed catalogs from the United States were examined and also one of the leading seed firms of England with the following results:

I. Firms using the disclaimer adopted by the American Seed Trade Association..

"Messrs. give no warranty, expressed or implied, as to description, quality, productiveness, or any other matter of any seeds they send out, and they will not be responsible for the crop. If the purchaser does not accept the goods on these terms, they are to be returned at once." "The above may be varied slightly and is often preceded by a statement of the reason this disclaimer is made, but substantially the above is found in the catalogs of the following firms:

Briggs Bros. & Co.	W. W. Barnard & Co.
Crosman Bros.	D. H. Ferry Co.
Henry A. Freer	Goodwin-Harries Co.
Wm. Eber & Sons	Holmes Seed Co.
Elgin Seed Co.	Peter Henderson & Co.
S. M. Isbell & Co.	Iowa Seed Co.
David Landreth & Sons	S. F. Leonard
E. W. Martz Seed Co.	L. L. May & Co.
F. B. Mills	Plant Seed Co.
J. R. Ratekin & Sons	Johnson & Stokes
Jerome B. Rice Seed Co.	J. H. Thorburn & Co.
T. W. Woods & Sons	Wood, Stubbs & Co.
Vernich Seed Co.	Vaughn's Seed Store
Sutton Sons, Reading, Eng.	Total 27.

II. "Do not warrant."

W. W. Buckbee Stump & Walker Co.

III. Warrant seeds true to name - John Lewis Childs.

IV. State that their seeds are tested and of good
germinating quality:

Forrest Seed Co. W. J. Haskin

Jno. A. Salzer Jas. Wick & Sons

V. Altee Burpee (seeds are sold under seal in more than
packet sizes).

V. Will refill the order gratis if seeds are not as
represented:

Alneer Bros. A. C. Anderson

J. J. Bell Harry H. Hammond Seed Co.

Jas. J. W. Gregory & Son Wm. Henry Maule

L. Templin & Sons

VI. No warranty found in catalog:

Burroughs Bros. Great Northern Seed Co.

F. C. Graves Funk Bros.

Farmer Seed Co. Miss C. H. Lippencott

Nebraska Seed Co. R. H. Shumway

Storrs & Harrison Co.

In the above division several of the firms entering into
the class using the standard disclaimer would also come under one
or more of the other heads, but each catalog was assigned to only
one class.

Out of the 51 catalogs examined 27 or 53 percent had the
standard form of disclaimer, and all except those who had none re-
fused to guarantee the crop. Many firms state the care with which
they test their seeds, and discard those not up to standard. In

one catalog under the following heading is given a statement which can hardly be carried into practice. "WHAT WE DO. We test every variety of seeds we offer in our green houses before we put them up. Seeds that do not test 95 to 100 percent are considered poor, and under no circumstances do we offer them to our customers. We guarantee all seeds to grow and to be pure and to be true to name. See guarantee below." An examination of the germination table given under Standards of Germination of Purity will show that beans, peas, and turnips are all that require 95 percent test, and celery is satisfied with 60, so that this statement can hardly be carried out.

Another firm makes three claims of which two can be contested. First, we are the only seedsmen of America who test all seeds and stamp the result of each test on each packet, showing what percent will grow. Granted. Second, we are the only seedsmen of America who stamp the date on each packet, showing that the seeds were put up expressly for this season's trade; also David Landreth and Son Seed Co. Third, we are the only seedsmen of America who state plainly in the catalog just how many seeds each packet will contain; also H. W. Buckbee and Miss Lippencott.

The importance of having read the disclaimer is shown in the following extract taken from the Florists' Exchange of March 22, 1902, page 332:

RECENT LAW SUITS.

Specially Prepared for THE FLORISTS' EXCHANGE

By John Henry Mann, of the New York City Bar.

In December and January the Appellate Division of the New York Supreme Court made two decisions of interest to the seed trade. The case of Wm. H. Bell against a seedsman in New York State was decided by Judges Williams, Adams, McLennen, Spring, and Hiscock, holding court at Rochester. This seedsman issued a catalog having his guarantee on the first page;

"My Guarantee: I guarantee that all seeds and other goods sent out from my establishment shall reach the purchaser safe, in good condition, be fresh and true to name, to grow if properly planted, and if such should not prove the case, I will re-fill the order free of charge, providing sufficient proof is given me within a reasonable time. I can not guarantee crops, and will not be responsible for them."

He also advertised in the catalog a variety of oats called the "Record Breaker," and said of them:

"After reading the experiences of my customers in growing this oats, is there one that can doubt that this is going to be a leading variety? Order early, for you certainly can not make a mistake. Price of choice stock, well cleaned, as follows," etc.

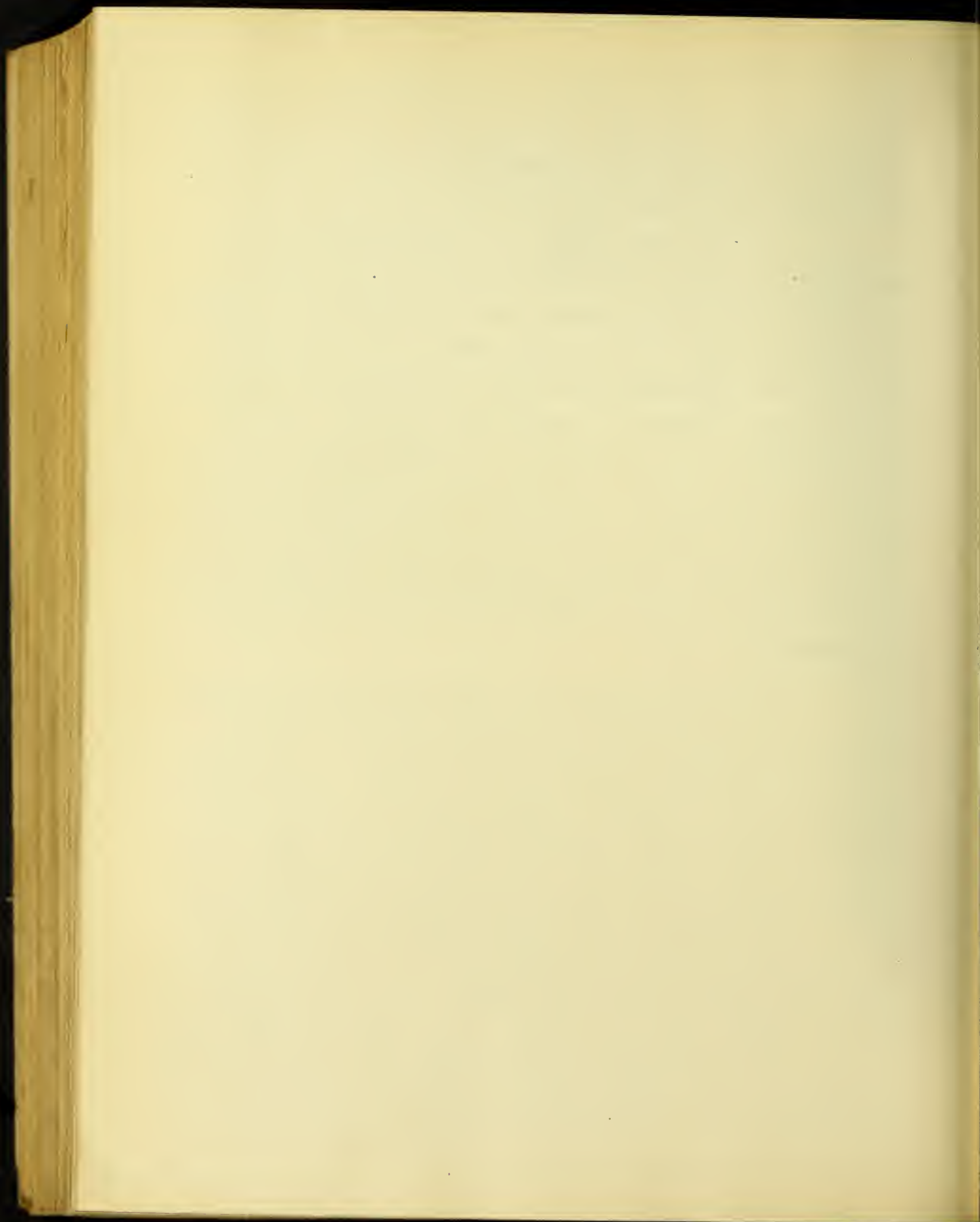
The farmer read the guarantee and advertisement of the "Record Breaker" oats, bought 60 bushels, which he received in bags each bag containing a card reading:

"Oats, Record Breaker. I exercised the greatest care to have all my seeds, potatoes, bulbs and plants, etc., fresh, pure, clean and true to name, and if such should not be the case I will

refill the order, free of charge, providing sufficient proof is given me within a reasonable length of time. I can not guarantee crops, and will not be held responsible for them. If these goods are not accepted on these terms they must be returned at once."

The farmer read the card. The oats contained mustard seed, which was easily discoverable by spreading the oats on a flat surface. The farmer, without making any examination, other than taking the oats up in the hand, sowed them in his field. When the mustard was discovered he sued the seedsman for damages caused by the introduction of mustard into his farm. The court decided in favor of the seedsman on the grounds, first, that, in view of his disclaimer in the catalog and on the cards which the farmer read, there was no warranty, and, second, that, as an examination would have disclosed the mustard seed, the farmer waived any warranty by omitting to examine and to return his purchase to the seedsman.

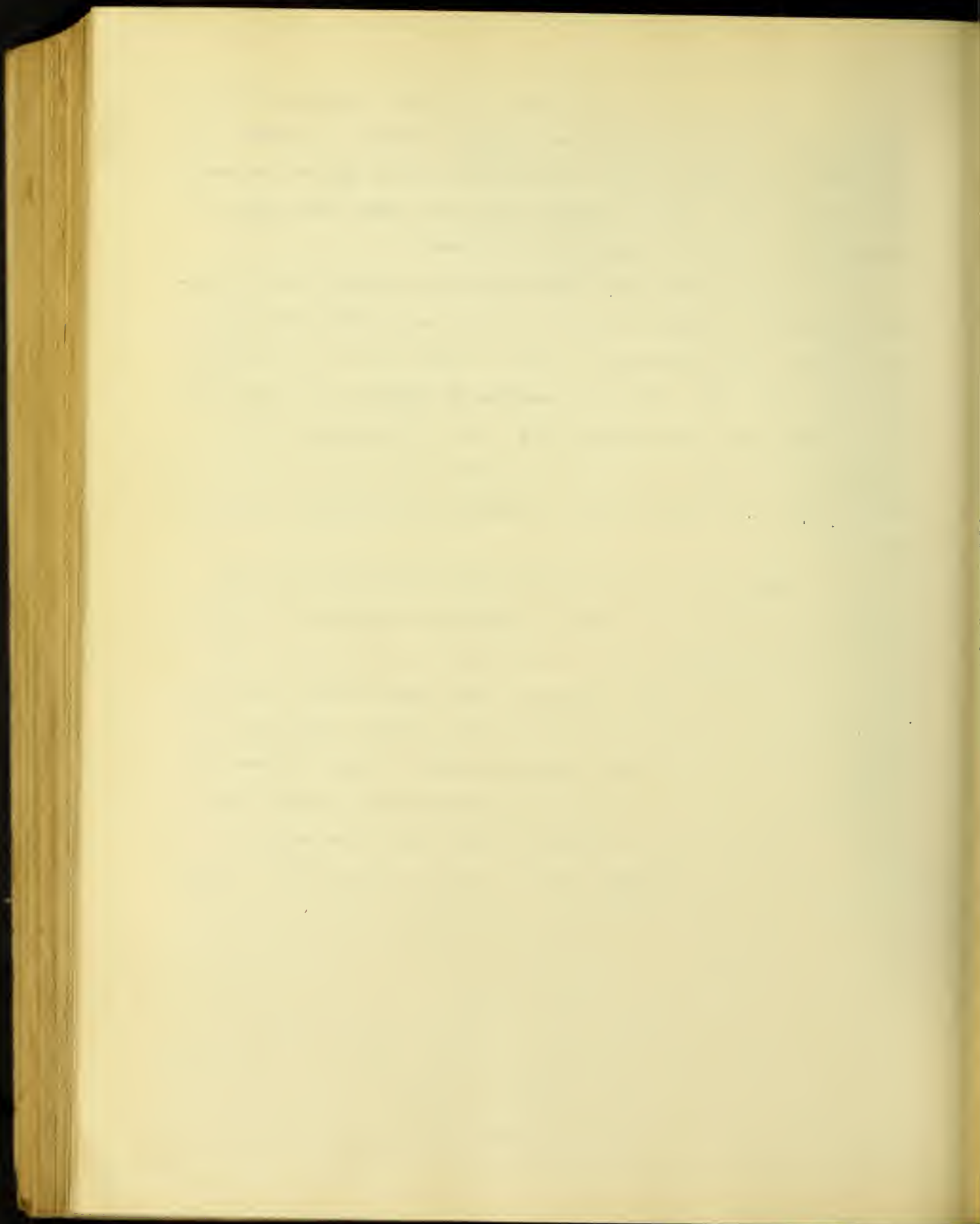
The case of a Philadelphia seed firm against Archibald E. Wyckoff was decided by Judges Bartlett, Goodrich, Woodward, Hirschberg, and Sewell, holding court in Brooklyn. The seedsmen in question sold to Wyckoff, a farmer, seeds of the Early Summer Flat Head Cabbage, seeds of the Long Blood Beet, and seeds of an extra early pea. It seems that the seedsmen were themselves the growers of the cabbage and beet seed. When the firm sued Wyckoff to compell him to pay for the seeds he set up a counter claim for damages for the loss of his crop, because the cabbage and beet seed were impure. The important part of the decision relates to a disclaimer. The seedsmen printed in small type on the upper left hand corner of the bill which they rendered to Wyckoff this notice:



"_____ give no warranty, express or implied, as to the description, quality, and productiveness, or any other matter, of any seeds they send out, and they will not be in any way responsible for the crop. If the purchaser does not accept the goods on these terms they are at once to be returned."

Wyckoff testified that although he received the bill before planting the seeds, he did not then observe this disclaimer, and, indeed, had never seen it until it was brought to his attention upon the trial. The court decided in Wyckoff's counter claim in his favor, upon the ground, first, that the seedsmen were the growers of the seeds, there was an implied warranty of quality, and second, that the disclaimer was not effective as Wyckoff had not read it.

Under the law as it stood in New York State for many years, the damages for a breach of warranty, expressed or implied, of the quality of seeds sold is the value of a crop such as the jury should believe would ordinarily have been produced that year, deducting all expense of raising the crop and also deducting the product or value of the crop actually raised. These damages may be very large, and it is important to seedsmen to protect themselves. The following principles of law should be considered. Where grower of seeds sells them to a planter there is an implied warranty that they are free from latent defects arising from the mode of cultivation. This has been the rule in New York State for many years. There is no implied warranty in a sale by a jobber who is not a grower, except that in a sale by sample there is an implied warranty that the goods are equal in quality to the sample, and except that if one goes to another and says to him that he desires an article for a certain purpose, and that other knowing that

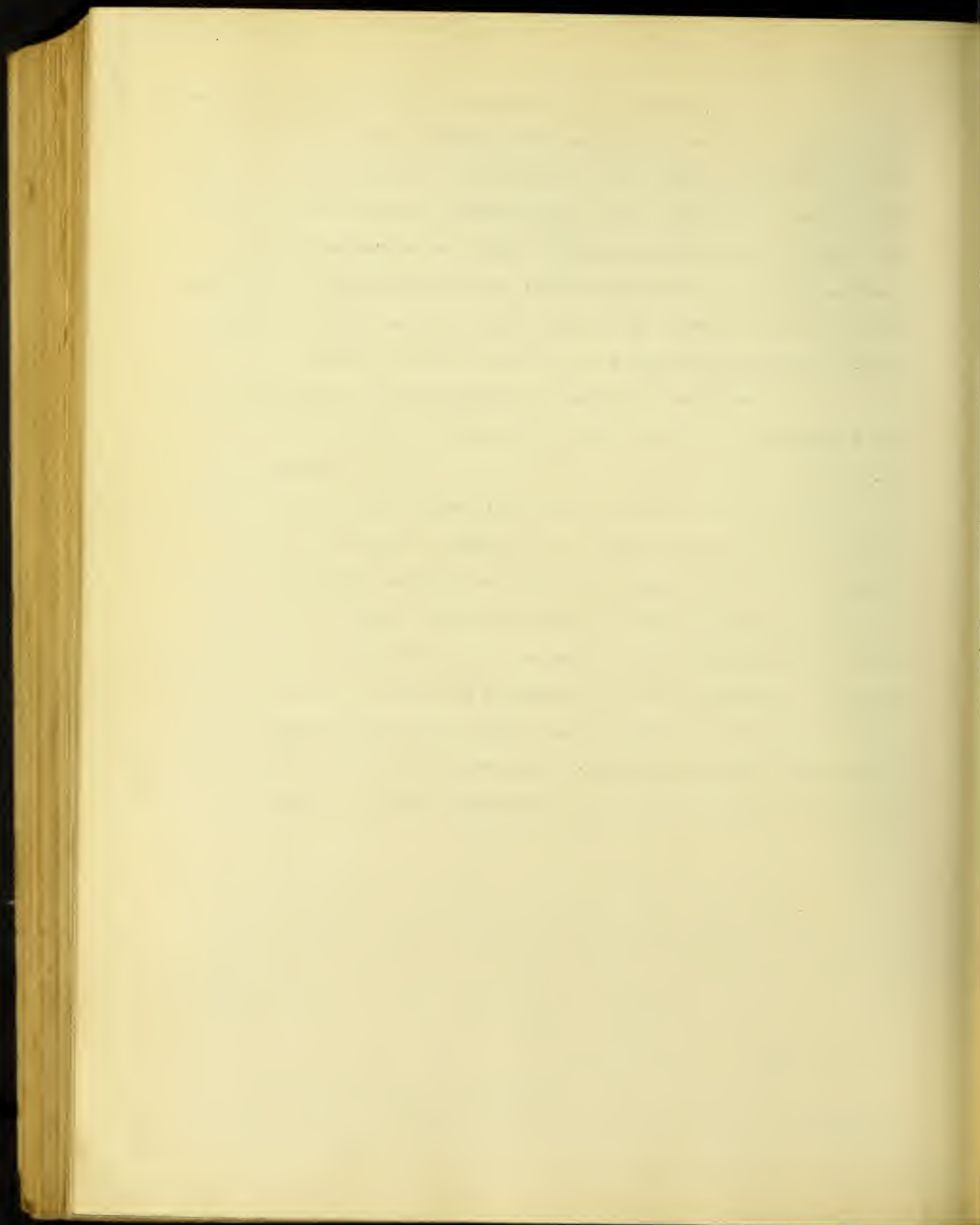


the first one relies upon his complying with the desire furnishes an article, there is an implied warranty that the article accords with the desire. Under this proposition a jobber, not selling by sample, and not knowing that the purchaser relies on his complying with an expressed desire, and not making an expressed warranty, is reasonably safe. It should be said as to a purchaser's expressed desire to use the seed for a particular purpose that the purpose should be something unusual or the rule does not apply.

It would be a reasonable precaution for seedsmen to print the disclaimer in type sufficiently large to make it cover the envelop containing the seed, so that if the purchaser swears that he did not read it the court or jury will decide that he must have read it and in fact did read it. To make it effective beyond question it would be safer to bring the printed disclaimer to the purchaser's actual notice. A salesman could waive the printed disclaimer by saying that it was nothing, or by giving an expressed warranty. Seedsmen and their salesmen can not be too careful never to write or say to a customer any thing that may be construed into an expressed warranty, and when they write or say any thing of the kind they should qualify it by adding that they do not warrant it so.

There are two facts emphasized in the above account; first, that the warranties to be effective must be read by the purchaser, and second, that a grower of seeds sells them to a planter there is an implied warranty that they are free from latent defects due to cultivation.

In the former case it seems as if the seedsman put his disclaimer on the packets (in a manner similar to Peter Henderson



Co. or Templin & Sons) it is more apt to be read. Another good location for the disclaimer is at the head of the order sheet in a manner similar to the sample attached from Johnson & Stokes. Only four firms out of the fifty catalogs examined had this disclaimer located at this important place. They were:

Johnson & Stokes

Peter Henderson Co.

Plant Seed Co.

J. H. Thorburn Co.

In all the packets sent out by the firms represented in this test only those from two firms had the disclaimer on the packet, but more added it to the larger amount in the one half pints or quarter pound packets. The disclaimer can not be added to many of the packets as now sent out, but the electrotpe could be omitted and the disclaimer put in its place as in the accompanying sample of Peter Henderson's packet.

In regard to the seed laws of the different states, the only reference found to a seed inspection law was in Maine, and given in Bulletin 36 of the Maine Experiment Station. The first section is the only one in which we are interested as it shows the ground which the law covers:

An Act to regulate the sale of Agricultural Seeds.

SECTION I. Every lot of seeds of agricultural plants, whether in bulk or package, containing one pound or more, and including the seeds of cereals, (except sweet corn), grasses, forage plants, vegetables, and garden plants, but not including those of trees, shrubs and ornamental plants, which is sold, offered or exposed for sale for seed by any person or persons in Maine, shall be accompanied by a written or printed guarantee of its percentage of purity, freedom from foreign matter ; provided, that mixtures may



HENDERSON'S TESTED SEEDS.**HANSON
LETTUCE.**

While we exercise the greatest care to have all seeds pure and reliable, we do not give any warranty express or implied. If the purchaser does not accept the seeds on these terms and conditions, they must be returned at once, and the money that has been paid for same will be refunded.—P. H. & Co.

—FROM—

PETER HENDERSON & CO.,
SEEDSMEN,
35 & 37 Cortlandt St., New York.

- 1 -

TESTED AND WARRANTED SEEDS.**IMPROVED HANSON
LETTUCE.**

OUR GUARANTY. While we exercise the greatest possible care to have all seeds strictly fresh and reliable, we guarantee them only so far that should they prove otherwise, we will upon satisfactory proof, replace them free of charge. We will in no case, however, be held responsible for more than the first cost of the seeds; failures are largely due to causes beyond our control.

From **L. Templin & Sons,**
— • CALLA, OHIO.

- 2 -

1213
The seeds from which
this packet was filled
have been
CAREFULLY TESTED
the result of which test
shows that under favor-
able conditions about
92 per cent. will grow.
THE "IDEAL" SEEDS

MAR 12 1901

- Reverse of 2 -



- 4 -

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In common with other responsible seed houses, we sell our goods subject to the following disclaimer, it being that adopted by the American Seed Trade Association. Johnson & Stokes give no warranty, express or implied, as to description, quality, productiveness or any other matter of any seeds, bulbs or plants they send out, and they will not be in any way responsible for the crop. If the purchaser does not accept the goods on these terms, they are at once to be returned.—J. & S.

Order Sheet **Johnson & Stokes' Tested Seeds, Bulbs, Etc.**

..FOR..

DIRECTIONS FOR ORDERING

SEEDS POSTPAID BY MAIL

At prices given in this Manual, we send all Vegetable Seeds by the packet, ounce, quarter-pound and pound, and all Flower Seeds, by Mail, postage prepaid, without any extra expense to the purchaser. If you order Vegetable Seeds by the pound, to be sent by freight or express, at your expense, you are entitled to deduct 10 cents per pound. On Beans, Sweet Corn and Peas, by the pint and quart, we quote prices both ways, by mail, postage paid, and by freight or express, so that they can be ordered sent either way as desired.

We guarantee all shipments of Seeds, Bulbs, Plants, Implements, Live Stock, etc., shall reach the purchaser safely and in good condition.

Letters always reach us if addressed simply "JOHNSON & STOKES, PHILADELPHIA, PA." Extra Order Sheets and Return Envelopes on application. Please order Flower Seeds by the numbers.

HOW TO SEND MONEY

CASH SHOULD ACCOMPANY THE ORDER

We will be responsible for money sent to us by P. O. Order, Express Money Order, Bank Draft, Express, or by Registered Letter. Every postmaster is required to register any letter on payment of 8 cents extra postage. The cost of remitting may, on all orders over \$1.00, be deducted from amount sent.

Amounts of \$1.00 or less may be sent by ordinary letter. When notes are not obtainable, or to make proper change, we accept postage stamps the same as cash. Any denomination will be accepted, but we prefer our customers to send two-cent stamps when convenient, as we use more of these than any others.

Names of persons and places, though familiar to writers, are often puzzling to others, hence write very plainly. Always sign the same name, when sending additional orders, and give full name, town, county and State.

FORWARD BY { State on this line whether wanted }
by Mail, Express or Freight.

YOUR NAME,

POST-OFFICE,

COUNTY,

STATE,

EXPRESS OR
FREIGHT OFFICE, }

Amount Enclosed

Post-Office Money Order, \$

Express Money Order,

Bank Draft,

Cash, Notes and Silver,

Postage Stamps,

(2c. stamps preferred.)

Total, \$

DATE, 1903

be sold as such when the percentages of the various constituents are stated.

It will be noticed in this law that only seeds in packages of one pound or over are included, so that it would not apply to the garden seed packet. Illinois has no law in regard to seed purity or inspection.

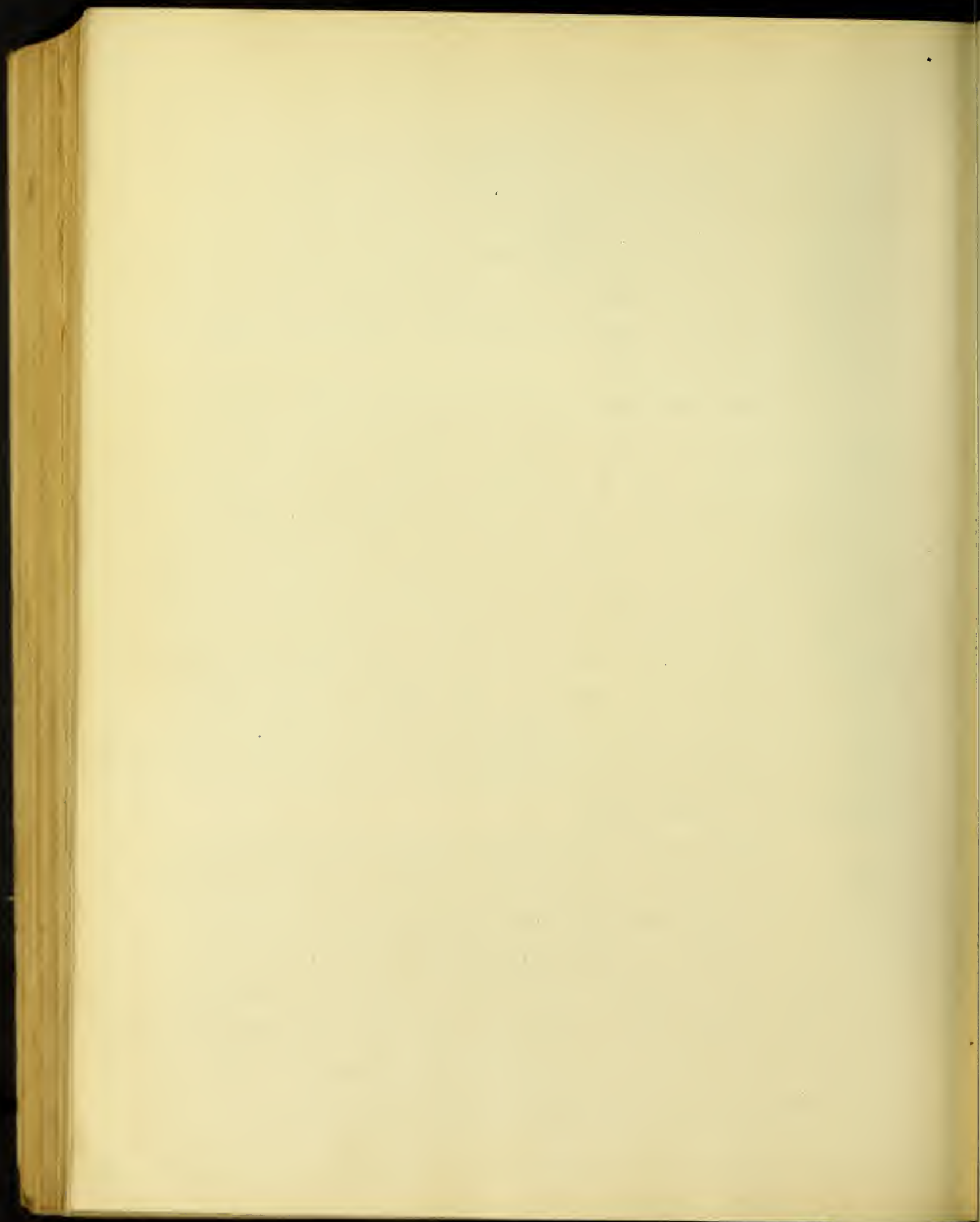
One of the chief reasons that the seedsmen do not warrant their seeds seems to be that they have no control over the planting or care of the seed after it leaves their hand, and it is so easy to handle improperly the best of seeds and cause poor returns, that they can hardly be blamed. The custom of the non-warranty for seeds is so common, and the majority of seedsmen are dependent upon the growers for their stock ~~and~~ that about all he can do is to pass the seed along to you at its face value. In the law suits cited it appears that the jobber of seeds is not as liable for the quality of the seeds as the dealer who is also a grower. Another point standing out clearly in the first case is that in order to have the non-warranty effective it must be read by the purchaser. This being the case does it not seem strange that the non-warranty is placed in an out of the way place where it must be searched out, is left off of many order sheets, and is rarely seen on the small packet. It may be that the omission of the non-warranty from the packet is intentional, thinking that the purchaser will not report such a small item, or if it is reported they are willing to send a fresh packet to replace the first. Few people who have a packet of seed fail them report the loss to the seedsmen, but rather lay the blame to him. However it is more often the fault of careless gardening than an attempt of the seedsmen to defraud the planter.

Purity.

The purity of the vegetable packages seeds was a surprise. It had been stated so many times that all kinds of impurities were introduced to make weight, that the scarcity of inert matter which might have been introduced was a surprise. While there were only a few packets in the number examined which did not have some impurities it will be noticed that these were present in small amounts in most cases.

Besides the fact that there were only a small weight of impurities present they were of such a character that it was very difficult to remove them by laboratory methods, and it is doubtful if they could be cleaned much more by modern machinery. The impurities were for the most part broken seed, chaff, pieces of dirt of the same size of the seed and such that they would pass through the same sieve as the pure seed. In packets of some of the larger seeds were found pieces of wood, stones and large seeds such as oats, wheat, water melon, and peas, which appear to owe their entrance to careless methods in package and storage in bins. These were in such small numbers that it can not be held that they were introduced to increase weight.

A glance at the tables will show that the same impurities are to be found in the same kind of seed, no matter from whom secured. This was especially brought out in the case of lettuce in which was a red gum in probably every sample secured; this is a good example of a substance that can not be removed by cleaning. Seeds differ in the ease of cleaning. Among those that were especially hard are beet, carrot, parsnip, and celery due to the short stems remaining from harvesting and a small size.



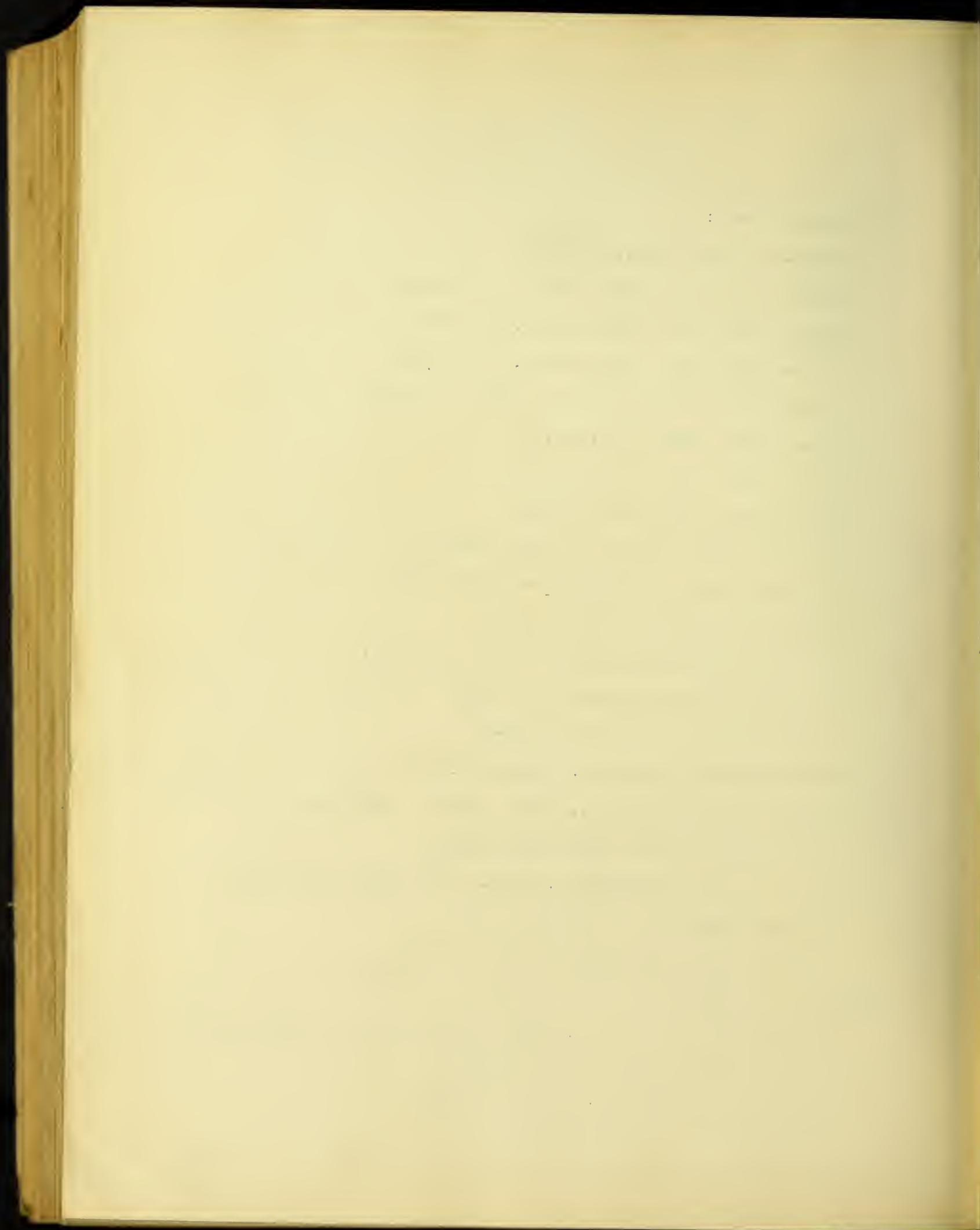
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- Maine Report 1888, pp 136-;47
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- Missouri Bulletin 6, 1889, pp 3-5
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- Rhode Island Report, 1896, pp 193-202
- South Carolina Bulletin 2, 1889, pp 9, Report pp 58-90
- Vermont Bulletin 12, 1889, pp 6-9
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New Mexico Bulletin 20, 1896, pp 121-145

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Seed Testing

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Rhode Island Bulletin 43, 1897, pp 13

North Carolina Bulletin 108, pp 347-360

Maine Bulletin 36, 1897, pp 8

Massachusetts Bulletin 44, 1897, pp 27-48

Iowa Bulletin 36, 1897, pp 356-357

Weeviled Peas and Peas for Seed

Kansas Bulletin 19, 1890, pp 193-196

Besides these there are many articles in the Year Book of the Department of Agriculture dealing with testing seeds at home and methods of harvesting which are of interest, but do not deal directly with this topic, hence are not mentioned in detail.

In the Experiment Station Record will be found abstracts of articles appearing in current publications and also foreign investigations.





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